FINAL
Field Report

Remedial Investigation
Former NIKE PR-79 Control Area
Foster, Rhode Island
DERP-FUDS D01RI0063/02

Version Number: 1

Prepared For:

Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

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November 1, 2021

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Defense Environmental Restoration Program (DERP)-
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ACRONYMS AND ABBREVIATIONS

%	percent
°C	degrees Celsius
ACTs	air coupled transducers
ADR	Automated Data Review
AECOM	AECOM Technical Services Inc.
AMSL	above mean sea level
AOC	Area of Concern
ATV	Acoustic Televiewer
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BGS	below ground surface
BTV	background threshold values
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis-1,2-DCE	cis-1,2-dichloroethene
CLP	Contract Laboratory Program
COPC	constituent of potential concern
CSM	conceptual site model
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
EB	equipment blank
EDD	Electronic Data Deliverables
EMI	Environmental Measurement Information
EPH	extractable petroleum hydrocarbons
eQAPP	electronic Quality Assurance Project Plan
ft	feet
FACT	FLUTe Activated Carbon Technique
FD	field duplicate
FLUTe	Flexible Liner Underground Technologies, LLC
FUDS	Formerly Used Defense Site
FUDSChem	Formerly Used Defense Sites Chemical database
GIS	Geographic Information System
GPS	Global Positioning System
HGI	Hager Geoscience, Inc.
HPFM	Heat Pulse Flow Meter
ICV	initial calibration verification
IDW	investigation-derived waste

LOD	limit of detection
LOQ	limit of quantitation
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
MLS	Multi-Level Sampler
MS	matrix spike
MSD	matrix spike duplicate
MSL	mean sea level
MTBE	methyl-tert-butyl-ether
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NTU	nephelometric turbidity unit
OTV	Optical Televiewer
PAL	project action level
PID	Photoionization Detector
POET	point-of-entry treatment
PVDF	polyvinylidene difluoride
PPE	personal protective equipment
ppm	parts per million
PSI	pounds per square inch
QAPP	Quality Assurance Project Plan
QC	Quality Control
RI	Remedial Investigation
RIDEM	Rhode Island Department of Environmental Management
RIDOH	Rhode Island Department of Health
RSLs	Regional Screening Levels
SDG	sample delivery group
SEDD	Staged Electronic Data Deliverable
SIM	Selected Ion Monitoring
SOP	Standard Operating Procedure
SVOC	semivolatile organic compound
SWDA	Safe Water Drinking Act
TB	trip blank
TCE	trichloroethene
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons

USACE	United States Army Corps of Engineers
USAPHC	United States Army Public Health Command
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
VOC	volatile organic compound

EXECUTIVE SUMMARY

This Field Report was prepared to support closure of the Former NIKE PR-79 Control Area located in Foster, Rhode Island ("Property"). This Field Report presents the data collected during Remedial Investigation (RI) phase field activities occurring between April 2020 and February 2021 and documents deviations from the Quality Assurance Project Plan (QAPP) dated September 11, 2020 and QAPP Addendum dated January 14, 2021 (hereinafter together referred to as the "QAPP"). The area where contamination associated with the Property has come to be located is referred to, throughout this Field Report, as the "Site". This Field Report compares analytical results to Project Action Limits (PALs). PALs are the lowest of the relevant human health and ecological screening levels and other applicable criteria that are established in the QAPP and may be used in the RI and later stages of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. Identified data gaps and recommendations of further investigation activities to support refinement of the conceptual site model (CSM) are presented in this Field Report. The refined CSM and a comparison of analytical results to calculated site-specific background threshold values (BTVs) will be presented in the Remediation Investigation Report (RI Report).

This Field Report summarizes the following RI activities:

- Background Soil Sampling;
- Surficial and Subsurface Soil Sampling;
- Monitoring Well Installation and Development;
- Hydraulic Conductivity Testing;
- Piezometer Abandonment;
- Borehole Geophysical Testing;
- Flexible Liner Underground Technologies, LLC (FLUTe) Activated Carbon Technique (FACT) Testing;
- Bedrock Fracture Connection Testing;
- Water FLUTe Multi-Level Sampler (MLS) Installation and Development;
- Background Groundwater Sampling;
- Groundwater Sampling;
- Background Surface Water, Porewater, and Sediment Sampling;

- Surface Water, Porewater, and Sediment Sampling;
- Water Supply Sampling;
- Land Surveying;
- Laboratory Data Validation; and
- Data Gaps and Recommendations.

1.0 FIELD INVESTIGATION ACTIVITIES

The following sections present and summarize data collected during RI phase field activities occurring between April 2020 and February 2021 at the Former NIKE PR-79 Control Area. A map showing the regional location of the Property is shown on **Figure 1**.

2.0 FIELD QUALITY CONTROL

The RI phase field activities included field and analytical quality control (QC) procedures. Field quality control is discussed in **Subsections 2.1 through 2.4**. Analytical QC is discussed in **Section 11 Laboratory Data Management.**

2.1 Field Instrument Calibration

Prior to the beginning of field activities, equipment was checked to ensure its completeness and operational readiness. Water quality instruments including multi-parameter water quality meters (e.g., YSIs 556 MPS), turbidity meters (e.g., HACH 2100Q, Geotech Portable), photoionization detectors (PIDs) (e.g., Tiger LT Ion-Science), and Colorimeter (e.g., HACH DR890) were checked initially upon arrival and were calibrated prior to daily use, if needed to support field activities that day. Periodic calibration checks were conducted during the day. Calibration checks were completed at the end of each day. Equipment calibration was conducted in accordance with the QAPP including Standard Operating Procedure (*SOP) 3-20: Operational and Calibration of a PID* and *SOP 3-24: Water Quality Parameter Testing for Groundwater Sampling*. No deviations from the QAPP were identified, except modified field forms were used, which contained the same information as the forms presented in SOP 3-20 and SOP 3-24. Field instrument calibration logs are included in **Appendix B**.

2.2 Field Quality Control Samples

Field QC samples consisted of field duplicates (FDs), matrix spike/matrix spike duplicates (MS/MSDs), equipment blanks (EBs), trip blanks (TBs), and temperature blanks. FD samples were collected at an average frequency of 11.5 percent (%), which is greater than the frequency of 10% specified in the QAPP. MS/MSD samples were collected at an average frequency of 6.1%, which is greater than the frequency of 5% specified in the QAPP. TB samples accompanied each cooler containing samples for volatile organic compounds (VOC) analysis and were analyzed for VOCs and VOCs Selected Ion Monitoring (SIM). An EB sample was collected and analyzed when non-dedicated sampling equipment (e.g., Henry sampler, etc.) were used to collect samples. A temperature blank was placed in each sample cooler to check that samples were preserved on ice at or below 4 degrees Celsius (°C) after shipment and upon receipt. Field QC samples types and counts are summarized in **Table 2-1** below.

Table 2-1
Summary of Field Quality Control Samples

Sampling Matrix	Field Samples Qty	Equip. Blanks Qty	Trip Blanks Qty	Field Duplicates		MS/MSD	
				Qty	%	Qty	%
Background Soil Samples	40	2	5	4	10	2	5.0
Surface Soil Samples	17			2	11.8	1	5.9
Subsurface Soil Samples	19			2	10.5	1	5.3
Groundwater Samples	32	2	18	5	15.6	2	6.3
Water Supply Samples	25	0	3	3	12.0	2	8.0
Surface Water Samples*	65	6	8	6	9.2	4	6.2
Porewater Samples*	65	6	8	8	12.3	4	6.2
Sediment Samples	33	3	14	4	12.1	2	6.1
TOTAL	**296**	**19**	**56**	**34**	**11.5**	**18**	**6.1**

Note: Asterisk (*) indicates number of both total and dissolved analysis.

Field QC sampling was performed in accordance with the QAPP. No deviations from the QAPP were identified. The Field QC sample results are presented and discussed in **Section 11 Laboratory Data Management**.

2.3 Sampling Handling, Storage, and Transport

Samples were stored on ice, packaged, and transported to Katahdin Analytical Services of Scarborough, Maine via laboratory courier under chain-of-custody. Prior to sample shipment, sample labels and chain-of-custody forms were quality-control checked by the Field Team Leader for correctness and completeness. After samples were received by the laboratory, the laboratory's sample delivery group (SDG) electronic log-in sheets were quality-control checked again by the Project Chemist for correctness and completeness. Samples were received by the laboratory at temperatures at or below 4°C and were received promptly after sampling to allow testing to occur within hold time requirements. Samples were prepared and analyzed within their respective holding times, with minimal exceptions. Holding times for pH in soil and sediment were not met since samples were received by the laboratory outside of the 24-hour criteria. The results are usable as estimated values. Exceptions are discussed in **Section 11 Laboratory Data Management**, as well as **Appendix P Data Validation Memoranda**. Sample handling activities were performed in accordance with the QAPP including *SOP 3-03: Recordkeeping, Sample Labeling, and Chain-of-Custody* and *SOP 3-04: Sample Handling, Storage, and Shipping*. No deviations from the QAPP were identified.

2.4 Equipment Decontamination

Dedicated and disposable sampling equipment (e.g., gloves, tubing, etc.) were utilized where possible to avoid the potential for cross contamination of samples. Non-disposable or non-dedicated sampling equipment that were used (e.g., Henry sampler, etc.) were decontaminated prior to sampling, between sample collections, between measurements, and prior to the equipment return. Decontamination consisted of a water rinse followed by a non-phosphate detergent (e.g., Alconox™) rinse, and a de-ionized water rinse with water provided by the laboratory. Decontamination activities were performed in accordance with *SOP 3-06: Decontamination*. No deviations from the QAPP were identified.

3.0 OVERBURDEN SOIL INVESTIGATION

Drilling and soil sampling occurred between April 27, 2020 and May 18, 2020. A total of 20 background soil borings (identified as PR79-SB-121 through PR79-SB-140) and 20 exploratory soil borings (identified as PR79-SB-101 through PR79-SB-120) were drilled by Glacier Drilling of Durham, Connecticut, a licensed drilling company in Rhode Island. Each soil boring was advanced using rotosonic drilling methods, except PR79-SB-105 that was advanced using direct push technology and PR79-SB-120 that was advanced by hand auger. Rotosonic drilling methods allowed soil borings to advance through overburden materials (i.e., silty sand and gravel, glacial till, and weathered bedrock) to the top of bedrock. While the observed thicknesses of overburden material varied from soil boring to soil boring, in general, overburden material encountered in the AOCs predominately consisted of silty sand and gravel overlaying glacial till and cobbles atop weathered bedrock. The top of bedrock was observed at each soil boring in the AOCs.

3.1 Utility Locating

Utility locating activites consisted of reviewing historical utility maps, walkthroughs, a surface geophyiscal investgiation, and notification to the DigSafe one-call system (ticket number 20201703480) on April 21, 2020.

Historical utility maps that were reviewed and available for field reference included:

- Historical Geographic Information Systems (GIS) utility data layer;
- “Layout and Grading Plan” (1955); and
- “Overall Site Plan” (2012) for a replacement septic system.

Pre-work walkthroughs that were conducted of the proposed drilling locations included:

- April 6, 2020, a pre-work walkthrough with Glacier Drilling; and
- April 22, 2020, a pre-work walkthrough with Northeast Geophysical Services of Bangor, Maine and Dependable Pump Repair of Wakefield, Rhode Island, who installed on-Property replacement plumbing for the Town of Foster and has Property-specific knowledge of buried water supply structures.

A surface geophyiscal investigation to locate buried utilities and mark safe drilling locations was performed by Northeast Geophysical Services between April 20, 2020 and May 12, 2020 using a radiodetection RD7000 line locator and GSSI S4000 GPR system with a 350 MHz HS antenna. Ground penetrating radar (GPR) was used to identify buried structures and changes in soil density that would be indicative of subsurface trenchwork where buried structures were placed. Northeast Geophysical Services indicated that a 30-foot radius was cleared around each boring where obstructions and/or brush did not hinder surveying. Northeast Geophysical Services typically employs a “star”-shaped pattern to map linear objects or structures. GPR is most accurate immediately below the unit, and the frequency of the instrument along with ground conditions dictate the depth of penetration/investigation. For utility locating purposes, GPR in this frequency range can expect to "see" down about 12+ feet and typically limited to immediately below the instrument. Radiodetection equipment can be used in active or passive modes where the instrument detects live lines (e.g. AC power lines) or requires an induced signal via an external source. Generally, the instrument can localize the utility (general area, trajectory), but not necessarily burial depth. For this effort, Northeast Geophysical Services simply cleared locations in the field and did not produce a report or provide additional data.

Historical utility maps were referenced during the surface geophyiscal investigation and observed changes from mapped locations of utilty structures were located using a handheld Global Positioning System (GPS) Trimble™ Geo 7x unit by North American Datum of 1983 (NAD83) and North American Vertical Datum of 1988 (NAVD88) with an approximate postprocessing accuracy of less than a foot. Geographic Information System (GIS) maps were subsequently updated based on the coordinates collected, which are summarized in **Table 3-1** below.

Table 3-1
Summary of GIS Utility Map Updates

	Structure	GIS Update
1	Former Mess Hall Building	Adjusted Building Footprint to Aerial Moved 5.8 ft South
2	Former Administration Recreation Building	Adjusted Building Footprint to Aerial Moved 5.1 ft Northeast
3	Septic Tank (Active)	Moved 6.3 ft Northwest
4	Distribution Box and Leachfield (Active)	Moved 9.3 ft Northwest
5	Former Grease Intercept (Abandoned)	Moved 3.4 ft Southeast
6	Former Mess Hall Heating Oil UST (Abandoned)	Moved 3.2 ft Southeast
7	Sewer Line from Former Administration Recreation Building and Former Mess Hall to Septic System (Abandoned)	Moved 9.8 ft Southeast
8	Sewer Line from Former Barracks to Septic System (Abandoned)	Moved 4.3 ft Southwest
9	Former Septic Tank (Abandoned)	Moved 21.8 ft Southwest
10	Former Lift Station (Abandoned)	Added
11	Former Distribution Box (Abandoned)	Moved 19.3 ft Southwest
12	Former Leachfield (Abandoned)	Moved 19.6 ft Southwest
13	Former Utility Shed (Abandoned)	Moved 12.4 ft Northeast
14	Former Utility Shed Electric Line (Abandoned)	Moved 10.9 ft Northeast

3.2 Background Soil Sampling

The QAPP established two background study areas located on the easternmost portion of the Property and north of the Property along Theodore Foster Drive, as shown on **Figure 2**. The background study areas were selected because they are outside the historical bounds of former Department of Defense (DoD) operations. The background studdy area in the easternmost portion of the Property was selected to evaluate background conditions with non-anthropogenic impacts, while the backgroundd study area along Theodore Foster Drive was selected to evaluate backgound conditions with potential anthropogenic impacts. Each background study area is 0.5 acres to represent the typical size of a residential lot and ecological receptor home range. Background soil samples were collected from the surface (i.e., 0-2 feet below ground surface (ft bgs)) and subsurface (i.e., between 2-10 ft bgs) to derive site-specific soil BTVs. Per the QAPP, surface soil samples were collected from a consistent depth interval of 0-2 ft bgs to allow for comparison to the existing dataset. Subsurface soil sampling intervals were pre-selected in the QAPP using Pacific Northwest National Laboratory Visual Sample Plan software to randomly assign two foot sample intervals between 2-10 ft bgs at each soil boring. Drilling and background soil sampling were performed in accordance with the QAPP including *SOP 3-16 Soil and Rock Classification* and *SOP 3-21 Surface and Subsurface Soil Sampling Procedures* except for soil boring PR79-SB-138, which was moved approximately 10 ft to the west to avoid overhead electrical lines.

Soils encountered in the background study areas were of the same soil type observed in the Areas of Concerns (AOCs), which predominately consisted of silty sand and gravel. Recovered soil cores were screened for volatile organic vapors with a PID immediately upon opening the sampling sleeve and visually inspected for indications of impacts. Observations and measurements were recorded on soil boring logs as provided in **Appendix C**. No elevated PID measurements or indications of impacts were observed in background soil borings.

A summary of background soil sample depths and analyses is listed in **Table 3-2** below.

3.2.1 Summary of Detected Analytical Results in Background Soil Samples

Background soil sample analytical results (detects only) are presented on **Table A-1**. Background soil sample locations are shown on **Figure 2**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- Several metals (i.e., aluminum, arsenic, barium, chromium, cobalt, iron, manganese, mercury, thallium, vanadium, zinc) were detected in soil in both background study areas.
- Toluene was the only compound detected above the limit of quantification (LOQ) in a background soil sample, which was detected at a concentration of 0.02 milligrams per kilogram (mg/kg) in a subsurface soil sample collected at PR79-SB-125. Other VOCs and SVOCs were detected at trace concentrations below their LOQ.

Background soil data will be used in the development of site-specific BTV for reference in the risk assessment to be provided in the RI Report.

3.3 Area of Concern Soil Sampling

Soil sampling was performed to investigate four AOCs identified as AOC-1, AOC-2, AOC-3, and AOC-4. Soil samples were collected from surface (i.e., 0-2 ft bgs) and subsurface (i.e., deeper than 2 ft bgs) depth intervals. Per the QAPP, surface soil samples were collected from a consistent depth interval of 0-2 ft bgs to allow for comparison to the existing dataset. The subsurface soil sampling depth was selected based on the observed groundwater table, stratigraphy, and/or where potential soil impacts were identified by field observation (i.e., elevated PID readings, etc.). Soil boring locations are shown on **Figures 3 through 6**. Drilling and soil sampling of overburden material was performed in accordance with the QAPP including *SOP 3-16 Soil and Rock Classification* and *SOP 3-21 Surface and Subsurface Soil Sampling Procedures* with the following exceptions:

- PR79-SB-102 was moved approximately 10 ft north to avoid a potential buried utility line.
- PR79-SB-111 was moved approximately 10 ft west to avoid a potential buried utility line.

Table 3-2
Summary of Background Soil Samples

Boring ID	Study Area	Max Depth (ft bgs)	Sample Interval (ft bgs)	Analytical Parameter			
				VOCs	SVOCs	Metals	SPLP Metals
PR79-SB-121	East	4	0-2		X	X	X
			2-4	X	X	X	X
PR79-SB-122		10	0-2		X	X	X
			8-10	X	X	X	X
PR79-SB-123		6	0-2		X	X	X
			4-6	X	X	X	X
PR79-SB-124		8	0-2		X	X	X
			6-8	X	X	X	X
PR79-SB-125		4	0-2		X	X	X
			2-4	X	X	X	X
PR79-SB-126		10	0-2		X	X	X
			8-10	X	X	X	X
PR79-SB-127		4	0-2		X	X	X
			2-4	X	X	X	X
PR79-SB-128		8	0-2		X	X	X
			6-8	X	X	X	X
PR79-SB-129		10	0-2		X	X	X
			8-10	X	X	X	X
PR79-SB-130		6	0-2		X	X	X
			4-6	X	X	X	X
PR79-SB-131	North	6	0-2		X	X	X
			4-6	X	X	X	X
PR79-SB-132		4	0-2		X	X	X
			2-4	X	X	X	X
PR79-SB-133		4	0-2		X	X	X
			2-4	X	X	X	X
PR79-SB-134		10	0-2		X	X	X
			8-10	X	X	X	X
PR79-SB-135		6	0-2		X	X	X
			4-6	X	X	X	X
PR79-SB-136		6	0-2		X	X	X
			4-6	X	X	X	X
PR79-SB-137		10	0-2		X	X	X
			8-10	X	X	X	X
PR79-SB-138		8	0-2		X	X	X
			6-8	X	X	X	X
PR79-SB-139		6	0-2		X	X	X
			4-6	X	X	X	X
PR79-SB-140		4	0-2		X	X	X
			2-4	X	X	X	X

Notes: SPLP: Synthetic Precipitation Leaching Procedure
Each background soil boring was advanced to their pre-selected termination depth.

- PR79-SB-108 was moved approximately 10 ft east away from the perimeter fence and placed in the drainage feature alongside the roadway.
- PR79-SB-110 encountered the top of bedrock at approximately 7 ft bgs, which is above the historically measured water level from nearby piezometer PZ-015 of approximately 10 ft bgs. PZ-015 is also typically dry (i.e., no water column) with very slow groundwater recharge. Because PR79-SB-110 was planned to be completed as an overburden monitoring well, a second drilling attempt was performed approximately 60 ft west near PR79-SB-109 (identified as PR79-SB-10R) to potentially identify deeper bedrock more suitable for installation of an overburden monitoring well.
- PR79-SB-112 was advanced to 5 ft bgs and penetrated the top of an abandoned septic vault. The vault appeared to be empty, except for a presumed one-inch thick layer of sedimentation on the bottom that did not appear to be flowable and remained contained within the vault structure. The top of the vault was permanently sealed with a steel cover concreted in-place then tremie grouted to grade. A sample of the septic material was collected from the bottom of the vault and analyzed for VOCs, extractable petroleum hydrocarbons (EPH), and metals.
- PR79-SB-114 was moved approximately 20 ft south and downgradient to avoid the Former Leach Field.

Overburden material encountered in the AOCs predominately consisted of silty sand and gravel, glacial till, and weathered bedrock. Recovered soil cores were screened for volatile organic vapors with a PID immediately upon opening the sampling sleeve and visually inspected for indications of impacts. Observations and measurements were recorded on soil boring logs as provided in **Appendix C**. A summary of notable PID measurements and observations are listed below:

- A PID measurement of 3.5 part per million (ppm) was detected in weathered bedrock from 25.5 to 27 ft bgs at PR79-SB-103. This soil boring was completed as overburden monitoring well PR79-MW-002.
- A PID measurement of 2.4 ppm was detected in sandy silt from 5 to 6 ft bgs at PR79-SB-114. This soil boring was completed as overburden monitoring well PR79-MW-007.
- A PID measurement of 10.9 ppm was detected from septic material at the bottom of an abandoned septic vault at PR79-SB-112. The U.S. Army Corps of Engineers (USACE) Project Geologist noted a heavy petroleum odor like Diesel and Heating Oil from inside the abandoned septic vault.

A detailed evaluation of soils and geology will be provided in the RI Report. A summary of AOC soil sample depths and analyses is provided in **Table 3-3** below.

Table 3-3
Summary of Area of Concern Soil Samples

Boring ID	AOC	Max Depth (ft bgs)	Sample Interval (ft bgs)	Analytical Parameter						
				VOCs	SVOCs	Metals	SPLP Metals	pH	TOC	Grain Size
PR79-SB-101	AOC-1	32	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-102		10	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-103		28	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-104		35	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-105		10	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-106		15	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-107		15*	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-120		2	0-2		X	X	X	X	X	X
PR79-SB-108	AOC-2	10	0-2		X	X	X	X	X	X
			4-6	X	X	X	X			
PR79-SB-109		12	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-110		10	0-2		X	X	X	X	X	X
			5-7	X	X	X	X			
PR79-SB-111		15*	0-2		X	X	X	X	X	X
			7-9	X		X	X			
PR79-SB-112	AOC-3	5	0-2		X	X	X	X	X	X
			2-4	X	X	X	X			
PR79-SB-113		20	0-2		X	X	X	X	X	X
			4-6	X	X	X	X			
PR79-SB-114		11	8-10	X	X	X	X			
PR79-SB-115		10	5-6	X	X	X	X			
PR79-SB-116		10	5-7	X	X	X	X			
PR79-SB-117	AOC-4	10	0-2		X	X	X	X	X	
			8-10	X	X	X	X			
PR79-SB-118		15	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			
PR79-SB-119		10	0-2		X	X	X	X	X	X
			8-10	X	X	X	X			

Notes: Asterisk (*) indicates drilling advancement continued into bedrock. See Section 5.0 BEDROCK INVESTIGATION.
TOC: Total Organic Carbon

3.3.1 Summary of Detected Analytical Results in Overburden Soil Samples

Surface and subsurface soil sample results from the AOCs were compared to their respective PALs established in the QAPP as presented (detects only) on **Tables A-2 and A-3**, respectively. PALs are the lowest of the relevant human health and ecological screening levels and other applicable criteria that are established in the QAPP and may be used in the RI and later stages of the CERCLA process. Soil sample locations are shown on **Figures 3 through 5**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- Several SVOCs (including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene) were detected at concentrations above their respective PALs in the surface soil sample collected at PR79-SB-103. However, SVOCs appear to be vertically delineated as SVOCs were not detected above their respective PALs in an underlaying subsurface soil sample collected from 8 to 10 ft bgs at that location, PR79-SB-103. PR79-SB-103 is located approximately 5 ft south of the Former Interconnecting Corridor in AOC-1. PR79-SB-103 was completed as overburden monitoring well PR79-MW-002.
- Benzo(a)pyrene was detected at a concentration (0.17 mg/kg) above the associated PAL of 0.11 mg/kg in a surface soil sample collected at PR79-SB-109. However, benzo(a)pyrene appears to be vertically delineated as benzo(a)pyrene was not detected above laboratory detection limits in an underlaying subsurface soil sample collected from 8 to 10 ft bgs at that location, PR79-SB-109. Benzo(a)pyrene also appears to be isolated as benzo(a)pyrene was not detected above laboratory detection limits in a surface soil sample collected approximately 5 ft away at PR79-SB-110 or in a surface soil sample collected at SB-017, which is located approximately 20 ft south of PR79-SB-109 in a Former Vehicle Maintenance Area in AOC-2 (AMEC, 2014a).
- Lead was detected at a concentration (11 mg/kg) at the PAL of 11 mg/kg in a surface soil sample collected at PR79-SB-109. Lead appears to be vertically delineated as lead was detected at a lower concentration (2.57 mg/kg) below the associated PAL of 150 mg/kg in a subsurface soil sample collected from 8 to 10 ft bgs at that location, PR79-SB-109. Lead also appears to be delineated horizontally as it was detected at a lower concentration of 3.29 mg/kg in a surface soil sample collected at nearby PR79-SB-110 and at 8.3 mg/kg in a surface soil sample collected at nearby SB-017 located in a Former Vehicle Maintenance Area in AOC-2 (AMEC, 2014a).
- Benzo(a)pyrene was detected at a concentration (0.17/0.24 mg/kg) above the associated PAL of 0.11 mg/kg in subsurface soil duplicate samples collected from 4 to 6 ft bgs at PR79-SB-113. However, benzo(a)pyrene appears to be vertically delineated as it was

detected at a lower concentration (0.017 mg/kg) below the associated PAL of 0.11 mg/kg in surface soil duplicate samples collected at that location, PR79-SB-113. Elevated concentrations of benzo(a)pyrene in subsurface soil at PR79-SB-113 may be related to a leaking 2,000-gallon No. 2 heating oil underground storage tank (UST) located approximately 50 ft east of PR79-SB-113, which is discussed in **Section 8 Summary of Underground Storage Tank Closure.** PR79-SB-113 was completed as overburden monitoring well PR79-MW-006.

- Lead was detected at a concentration (40.4 mg/kg) above the associated PAL of 11 mg/kg in a surface soil sample collected at PR79-SB-107. Lead concentrations appear to be vertically delineated as lead was detected at a lower concentration (1.34 mg/kg) below the associated PAL of 150 mg/kg in a subsurface soil sample collected from 8 to 10 ft bgs at that location, PR79-SB-107. PR79-SB-107 is located in the Former Helicopter Pad in AOC-1. PR79-SB-107 was completed as bedrock monitoring well PR79-BR-001.
- Several other metals (i.e., aluminum, arsenic, barium, chromium, cobalt, iron, manganese, mercury, thallium, vanadium, and zinc) were detected in AOC soil samples. These metals were also detected in background soil samples. Constituents detected at concentrations greater than human health and/or ecological risk-based screening levels will be further evaluated in comparison to site-specific BTVs in the RI Report.
- A sample of septic material collected from the abandoned septic vault (identified as sample PR79-SM-1) was analyzed as a liquid for VOCs, EPH, and metals. VOCs were detected including 1,2,4- trimethylbenzene (6.5 µg/L), total xylenes (4.6 µg/L), and 1,3,5-trimethylbenzene (2.2 µg/L). EPH analysis reported hydrocarbon chains in the ranges of C9-C18 aliphatics (22,000 µg/L), C19-C36 aliphatics (10,000 µg/L), C11-C22 aromatics (6,000 µg/L), as well as specific hydrocarbon compounds including phenanthrene (15 µg/L), 2-methylnaphthalene (14 µg/L), and benzo(k)fluoranthene (11 µg/L). Total inorganics were detected including calcium (83,400 µg/L), sodium (73,700 µg/L), and potassium (21,800 µg/L). Based on the analytical results, the septic material appears to be indicative of sewage. No chlorinated VOCs were detected above laboratory detection limits. The laboratory report is included in **Appendix O**.

4.0 OVERBURDEN GROUNDWATER INVESTIGATION

4.1 Overburden Monitoring Well Installation and Development

Eight monitoring wells (identified as PR79-MW-001 through PR79-MW-008) were installed in overburden material (i.e., above the top of competent bedrock) between May 1, 2020 and May 11, 2020. The monitoring well screens were set across a combination of water bearing units of the overburden material as follows: Overburden monitoring well PR79-MW-008 was screened in glacial

till materials only. Overburden monitoring wells PR79-MW-001, PR79-MW-002, PR79-MW-004, PR79-MW-005, and PR79-MW-007 were screened across glacial till materials with a thin layer (i.e., less than two ft thick) of weathered bedrock at the bottom of the well screen. Overburden monitoring wells PR79-MW-003 and PR79-MW-006 were screened across glacier till materials with a thicker layer (i.e., greater than two ft thick) of weathered bedrock or highly fractured bedrock.. A detailed evaluation of the saturated thicknesses and characteristics of the overburden deposits will be provided in the RI Report. Overburden monitoring well installation was performed by Glacier Drilling of Durham, Connecticut. Overburden monitoring well locations are shown on **Figure 7**. A summary of well construction is provided on **Table A-4** and construction logs are provided in **Appendix B**. Overburden monitoring wells were installed in accordance with the QAPP with the following exceptions:

- PR79-MW-005 was installed at nearby soil boring PR79-SB-109 instead of PR79-SB-110. PR79-SB-110 encountered the top of bedrock at approximately 7 ft bgs on a first drilling attempt then at approximately 9 ft bgs on a second drilling attempt (at PR79-SB-110R), which is above the historically measured water level as nearby piezometer PZ-015 of approximately 10 ft bgs. PZ-015 is also typically dry (i.e., no water column) with very slow groundwater recharge. Nearby PR79-SB-109 was selected as a better candidate for an overburden monitoring well because groundwater recharge was observed in the borehole and the top of bedrock was slightly deeper.
- Two overburden monitoring wells (identified as PR79-MW-006S and PR79-MW-006D) were planned approximately 20 ft away from each other and upgradient of the Former Mess Hall to assess groundwater conditions in shallow and weathered bedrock water bearing units migrating beneath the building. Soil boring PR79-SB-113 (planned to be completed as PR79-MW-006D) encountered the top of bedrock at approximately 6 ft bgs, which was above the groundwater table and no soil moisture was observed. Therefore, an overburden monitoring well was not installed at PR79-SB-113. The top of bedrock at nearby soil boring PR79-MW-006S was encountered at approximately 11 ft bgs and completed as an overburden monitoring well (identified without the “S” or “D” designations as PR79-MW-006) to assess groundwater conditions of the single water bearing unit migrating beneath the building.

The eight newly installed overburden monitoring wells and five existing piezometers were developed between May 15, 2020 and June 15, 2020. Well development records are provided as **Appendix C**. Overburden monitoring well development was completed in accordance with the QAPP and *SOP 3-13: Monitoring Well Development*, except PR79-MW-008 that could not be purged to achieve well development parameters because the well was observed to be dry (i.e., no water column).

4.2 Water Level Measurements

Water levels were measured at the eight newly installed overburden monitoring wells, two newly installed stream gauging stations (identified as PR79-STATION-001 and PR79-STATION-002), and five existing piezometers between May 2020 and February 2021. Additionally, water levels were measured from each piezometer, including the nine abandoned piezometers, during a site walkthrough on July 8, 2019. A detailed evaluation of hydrogeology, including vertical hydraulic gradients between overburden and bedrock, will be provided in the RI Report. Water level measurements and elevations for overburden and bedrock wells are presented in **Table A-5** and **Table A-6**. A map showing overburden groundwater elevations on the Property is presented on **Figure 7**. A regional map showing bedrock groundwater and stream gauging station elevations is presented on **Figure 8**.

4.3 Overburden Groundwater Sampling

Overburden groundwater sampling was performed at the eight newly installed overburden monitoring wells, five existing piezometers, and two dug wells (identified as PR79-WL-001 and PR79-WL-003) between November 16, 2020 and December 2, 2020. Groundwater sampling was performed in accordance with the QAPP including *SOPs 3-14 Monitoring Well Sampling* and *SOP 3-24 Water Quality Parameter Testing for Groundwater Sampling* with the following exceptions:

- Overburden groundwater samples were collected upon groundwater recharge at least 48 hours after being purged dry by well development or subsequent sampling attempts and are representative of groundwater conditions in the fall season. Rapid drawdown of the water table during low-flow purging and the resulting elevation of turbidity noted in groundwater collection logs are characteristic of purging an overburden formation of low hydraulic conductivity in the dry season.
- Due to low surrogate recovery causing the rejection of an SVOC (i.e., pentachlorophenol) result from a groundwater sample collected at PR79-MW-007 on December 1, 2020, a second groundwater sample was collected at PR79-MW-007 on February 11, 2021 for analysis of pentachlorophenol; however, the well was purged dry before water quality measurements could be recorded. During the re-sampling mobilization, water levels were measured at PZ-001, PZ-005, PZ-010, PZ-014, PR79-MW-004, and PR79-MW-008 that previously could not be sampled for the full list of analytical parameters due to a limited or no water volume present in those wells. Higher groundwater elevations measured in February 2021 allowed for groundwater samples to be collected at PZ-001, PZ-005, PZ-010, and PZ-014.

- PZ-001 was purged dry (i.e., no water column) after an initial groundwater sampling attempt on November 17, 2020 where insufficient water volume was collected for analysis and water quality measurements. PZ-001 was observed dry when water levels were measured on November 17, 2020, November 18, 2020, November 19, 2020, November 30, 2020, December 2, 2020, December 3, 2020, and December 8, 2020. A groundwater sample was collected with sufficient water volume on February 10, 2021.
- PZ-005 was purged dry after an initial groundwater sampling attempt on November 17, 2020 where insufficient water volume was collected for analysis and water quality measurements. On December 2, 2020, sufficient water volume was collected for VOC analysis only. A second groundwater sample was collected on February 12, 2021 for the remaining list of analytical parameters; however, due to a low water volume and high drawdown, the groundwater sample was collected before stabilization was achieved.
- PZ-007 was observed with a limited or no water volume present on November 17, 2020, November 30, 2020, and December 3, 2020. On December 8, 2020, sufficient water volume was collected for analysis of the full list of analytical parameters; however, the well was purged dry before water quality measurements could be recorded.
- PZ-010 was observed with a limited or no water volume present on November 17, 2020, November 18, 2020, November 19, 2020, November 23, 2020, and November 30, 2020. On December 2, 2020, sufficient water volume was collected for VOC analysis only. A second groundwater sample was collected on February 12, 2021 for the remaining list of analytical parameters.
- PZ-014 was observed with a limited or no water volume present on November 17, 2020, November 23, 2020, and November 30, 2020. On December 2, 2020, sufficient water volume was collected for VOC analysis only. A second groundwater sample was collected on February 12, 2021 for the remaining list of analytical parameters.
- PR79-MW-004 was observed with a limited water volume present on November 17, 2020, November 23, 2020, and November 30, 2020. On December 2, 2020, sufficient water volume was collected for VOC analysis only. PR79-MW-004 was observed dry (i.e., no water volume) on February 12, 2020.
- PR79-MW-008 was observed dry (i.e., no water volume) on eight water level measuring attempts between May 2020 and February 2020. No groundwater sample was collected.
- A water sample was collected from a dug well south of the Property (identified as PR79-WL-003) located at 33 Winsor Road, which was not included in the QAPP. PR79-WL-003 was sampled to investigate overburden groundwater that may interact with potential seeps.

Observations and measurements were recorded on Groundwater Sampling Logs included as **Appendix E.** A summary of water quality parameters is provided in **Table A-7**. A summary of notable observations and measurements is provided below:

- A hydrogen sulfur-like odor (i.e., similar to the smell of rotten eggs) was observed in purge water at PR79-MW-003.

A summary of overburden groundwater sample locations and analyses is listed below in **Table 4-1**.

4.3.1 Summary of Detected Analytical Results in Overburden Groundwater Samples

Overburden groundwater results were compared to their respective PALs established in the QAPP as presented (detects only) on **Table A-8**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- Trichloroethene (TCE) was detected at an estimated concentration (33 µg/L) above the associated PAL of 0.28 µg/L in a groundwater sample collected at PR79-MW-003. PR79-MW-003 is located approximately 5 ft north of the Former Frequency Changer/Generator Building in AOC-1 and was installed as a permanent replacement well for PZ-019. Piezometer PZ-019 was installed in 2013 and completed as a 1-inch diameter well. The well was installed at location SB-019 where the maximum drilling depth was 20 feet. PZ-019 was screened at 4 to 14 ft bgs through glacial till materials, 6 feet above the maximum drilling depth of 20 feet, for an unknown reason. Volatile organic vapors from PID readings were not detected during installation of PZ-019. Overburden monitoring well PR79-MW-003 was completed as a 2-inch diameter well, screened at 23 to 33 ft bgs through a combination of glacial till materials (23-25 ft) and weathered bedrock (25-33 ft). Volatile organic vapors from PID readings were also not detected during installation of PR79-MW-003. TCE was detected at an estimated concentration of 0.9 µg/L in a groundwater sample from PZ-019 collected on July 29, 2013 (AMEC, 2014b). Previous groundwater sampling at PZ-019 also detected pentachlorophenol and naphthalene; however, detections of these compounds were not replicated in the groundwater sample collected at PR79-MW-003.

Table 4-1
Summary of Overburden Groundwater Samples

Well ID	AOC	Analytical Parameter										
		VOCs	SVOCs	Total Metals	Dissolved Metals	TOC	Dissolved Gases	Nitrate Nitrite	Sulfate	Chloride	Sulfide	Alkalinity
PR79-MW-001	AOC-1	X	X	X	X	X	X	X	X	X	X	X
PR79-MW-002		X	X	X	X	X	X	X	X	X	X	X
PR79-MW-003		X	X	X	X	X	X	X	X	X	X	X
PR79-MW-004		X										
PR79-MW-005	AOC-2	X	X	X	X	X	X	X	X	X	X	X
PR79-MW-006	AOC-3	X	X	X	X	X	X	X	X	X	X	X
PR79-MW-007		X	X	X	X	X	X	X	X	X	X	X
PR79-MW-008												
PZ-001	AOC-1	X	X	X	X	X	X	X	X	X	X	X
PZ-005		X	X	X	X	X	X	X	X	X	X	X
PZ-007		X	X	X	X	X	X	X	X	X	X	X
PZ-010		X	X	X	X	X	X	X	X	X	X	X
PZ-014		X	X	X	X	X	X	X	X	X	X	X
PR79-WL-001	Off-Property	X	X	X	X	X	X	X	X	X	X	X
PR79-WL-003		X	X	X	X	X	X	X	X	X	X	X

Note: Ferrous iron results measured using a field test kit (e.g., HACH DR890 colorimeter) is provided in Table A-7. Note that location PR-79-WL-003 was not screened for ferrous iron since this location was samples by USACE personnel and no AECOM personnel were present.

- Chrysene was detected at estimated concentrations (0.038 and 0.047 µg/L) below the associated PAL of 25 µg/L in groundwater samples collected at PR79-MW-003 and PZ-007, respectively. The maximum historic concentration of chrysene detected in a groundwater sample was estimated at a concentration of 0.02 µg/L in a groundwater sample collected at PZ-007 on July 30, 2013.
- 1,2,4-Trimethylbenzene was detected at an estimated concentration (0.38 µg/L) below the associated PAL of 5.6 µg/L in a groundwater sample collected at PZ-007. The maximum historic concentration of 1,2,4-trimethylbenzene detected in groundwater was estimated at a concentration of 0.2 µg/L in a groundwater sample collected at PZ-019 on July 7, 2016.
- Acetone was detected at a concentration (5 µg/L) below the associated PAL of 1,400 µg/L in a groundwater sample collected at PR79-MW-004.
- Chloroform was detected at estimated concentrations (ranging from 0.044 and 0.066 µg/L) below the associated PAL of 0.22 µg/L. Chloroform is a disinfection biproduct from chlorination and chemical breakdown product of chlorinated solvents, such as TCE.

- Aluminum, arsenic, chromium, cobalt, iron, manganese, and thallium were detected at concentrations above their respective PALs in groundwater samples. These metals were also detected in previous groundwater samples (AMEC, 2014b). Constituents detected at concentrations greater than human health and/or ecological risk-based screening levels will be further evaluated in comparison to site-specific BTVs in the RI Report.
- Nitrate was detected at an estimated concentration (210 µg/L) slightly above the associated PAL of 200 µg/L in a groundwater sample collected from PR79-MW-006. PR79-MW-006 is located approximately 100 ft away from an active septic leach field constructed in the 2000s by the Town of Foster to replace a former septic system; therefore, nitrate is likely associated with that septic leach field.

4.4 Hydraulic Conductivity Testing

Hydraulic conductivity (K) testing was initially attempted on July 10, 2020 and ultimately completed between November 18, 2020 through November 23, 2020. During the initial round of hydraulic conductivity testing on July 10, 2020, groundwater elevations were insufficient to provide enough water column to conduct slug tests in newly installed monitoring wells with the exception of PR79-MW-001, PR79-MW-002, and PR79-MW-003. However, the time series data obtained on July 10, 2020 was either incomplete or of poor quality, so hydraulic conductivity testing was repeated on November 18, 2020 through November 23, 2020 at PR79-MW-001, PR79-MW-002, PR79-MW-003, and PR79-MW-006. Hydraulic conductivity testing could not be performed at PR79-MW-004, PR79-MW-005, PR79-MW-007, and PR79-MW-008 because the groundwater elevations observed on November 17, 2020 were less than or equal to the length of the 5-foot slug needed to conduct the test. Hydraulic conductivity testing was performed using a *Seametrics Aqua4 PT2X* transducer with continuous ¼-second readings during slug tests. Both rising head and falling head tests were conducted. A water level meter was used to manually check readings throughout each test. Hydraulic conductivity testing was performed in accordance with the QAPP including *SOP 3-35 In-Situ Hydraulic Conductivity Testing via Rising or Falling Head Slug Testing.*

Slug tests were analyzed using AQTESOLV. Calculated hydraulic conductivity (K) values for the wells are presented below in **Table 4-2**.

Table 4-2
Summary of Hydraulic Conductivity Testing Results

Well ID	Screen Depth (ft bgs)	Screen Depth (ft amls)	Geologic Unit	Geometric Mean K (ft/day)
PR79-MW-001	20.6 - 30.6	599.50 - 589.50	Glacial Till	0.20*
PR79-MW-002	17 - 27	601.83 - 591.83	Glacial Till	0.12
PR79-MW-003	23 - 33	594.65 - 584.65	Weathered Bedrock	0.10
PR79-MW-006	2 - 11	594.26 - 585.26	Overburden	1.50

Note: * Only one test performed in PR79-MW-001

AQTESOLV reports and a brief technical memorandum are presented in **Appendix F**. The K values calculated in the newly installed overburden monitoring wells are generally within an order of magnitude of the K values derived from the existing piezometers in AOC-1 (USACE, 2015). Differences in K values may be due to differences in the well construction types (i.e., the piezometers were installed by direct push drilling to refusal using one-inch diameter pre-packed well screens, whereas the newly installed overburden monitoring wells were installed by rotosonic drilling using two-inch diameter wells with two-inch thick sand pack). A detailed evaluation of hydraulically conductivity within the different water bearing units will be provided in the RI Report.

4.5 Well Abandonment

Per the QAPP, selected piezometers installed during the 2013 RI were abandoned on May 11, 2020 and May 12, 2020. Piezometer abandonment was performed by fully removing the one-inch pre-packed PVC casing and screen from the ground and tremie grouting the borehole to surface grade. Additionally, the “unidentified pipe” observed west of Former Water Pump House was abandoned by tremie grouting the steel casing to surface grade on June 25, 2020. Well abandonment was performed in accordance with the QAPP including *SOP 3-15 Monitoring Well and Borehole Abandonment* and the Rhode Island Department of Environmental Management (RIDEM) abandonment procedures for piezometers (RIDEM, 2005). No deviations from the QAPP were identified, except a grout slurry (i.e,. a mixture of bentonite chips and concrete) was used for backfilling instead of bentonite chips. A summary of well abandonment is below in **Table 4-3**.

Table 4-3
Summary of Well Abandonment

Well ID	Abandonment Date	Notes
PZ-002	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-003	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-004	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-006	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-009	5/11/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-011	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-015	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-019	5/11/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
PZ-022	5/12/2020	Removed 1-inch pre-packed PVC. Tremie grouted to surface.
Unidentified Pipe	6/25/2020	Tremie grouted to surface.

5.0 BEDROCK INVESTIGATION

5.1 Bedrock Monitoring Well Installation and Development

Five bedrock monitoring wells (identified as PR79-BR-001 through PR79-BR-005) were drilled using air rotary drilling methods to 300 ft bgs between May 21, 2020 and June 11, 2020 and developed between June 12, 2020 and June 25, 2020. Bedrock drilling logs are provided as **Appendix C** and well development logs are provided as **Appendix D**. A summary of notable observations during bedrock drilling is below:

- PR79-BR-001 appeared to have fractures at approximately 30 ft bgs based on drill rig performance (i.e., drill rig “jerking” and water loss). Drilling production slowed at approximately 96 ft bgs and again at approximately 216 ft bgs indicating harder bedrock material at those depths.
- PR79-BR-002 appeared to have fractures between 92 and 93 ft bgs based on drill rig performance with “rust staining” observed in rock chips at that depth. Drilling production slowed between 264 and 269 ft bgs indicating harder bedrock material at that depth.
- PR79-BR-003 appeared to have fractures at approximately 156 ft bgs with “rust staining” observed in rock chips at that depth, and between 180 and 220 ft bgs based on drill rig performance.
- PR79-BR-004 was observed to be very dry below approximately 30 ft bgs.

- PR79-BR-005 appeared to have fractures at approximately 85, 155, and 192 ft bgs based on drill rig performance.

Bedrock monitoring well development was performed in accordance with the QAPP with the following observations:

- PR79-BR-001 was initially attempted to be developed using a combination of surging with a surge block and purging with an air lift pump in 10-foot intervals from the top-down; however, the air lift pump was unable to remove settled fines from the bottom of the borehole, which kept plugging the tubing and requiring repeated unplugging or replacing. A modified development approach was implemented, where settled fines were first removed using compressed air from the bottom-up, then an air lift pump was used top-down. Approximately 6 ft of sediment was removed from the bottom of the borehole using compressed air. PR79-BR-001 was then purged dry three times, removing approximately 1,025 gallons of purge water and sediment, which is more than three times the well volume of 287 gallons. The final turbidity reading decreased to 218 nephelometric turbidity unit (NTU) from greater than 800 NTU recorded when development began. The measured groundwater recharge rate was approximately 0.75 gallons per minute (gal/min).
- PR79-BR-002 was developed by removing approximately 9 ft of sediment from the bottom of the borehole using compressed air. PR79-BR-002 was then purged dry three times using an air lift pump that removed approximately 1,025 gallons of purge water and sediment, which is more than three times the well volume of 287 gallons. The final turbidity reading decreased to 250 NTU from 400 NTU recorded when development began. The measured groundwater recharge rate was approximately 0.9 gal/min.
- PR79-BR-003 was developed by purging dry four times using a combination of compressed air and an air lift pump that removed approximately 900 gallons of purge water and sediment, which is more than three times the well volume of 294 gallons. The final turbidity reading was 75 NTU. The measured groundwater recharge rate was approximately 1.3 gal/min.
- PR79-BR-004 was developed by removing approximately 11.5 ft of sediment from the bottom of the borehole using compressed air. PR79-BR-004 was then purged dry three times using an air lift pump that removed approximately 400 gallons of purge water and sediment. The well volume is 293 gallons. The final turbidity reading was 49 NTU. The measured groundwater recharged rate was very slow at approximately 0.1 gal/min; therefore, the target purge volume of three well volumes could not be met.
- PR79-BR-005 was developed by removing approximately 11 ft of sediment from the bottom of the borehole using compressed air. PR79-BR-001 was then purged dry three

times using an air lift pump that removed approximately 900 gallons of purge water and sediment, which is more than three times the well volume of 285 gallons. The final turbidity reading decreased to 99 NTU from 479 NTU recorded when development began. The measured groundwater recharge rate was approximately 1.5 gal/min.

5.2 Borehole Geophysical and FLUTe Activated Carbon Technique Testing

Borehole geophysical logging was performed at PR79-BR-001 through PR79-BR-005 between July 6, 2020 and July 8, 2020 by Hager-Richter Geoscience of Salem, New Hampshire. The objectives of downhole geophysical logging were to identify potential water-bearing and transmissive fracture zones in the bedrock along the length of each open hole; to define fracture depths, strikes, and dips; and, to evaluate hydraulic conditions for a subset of those fractures. A secondary goal was to identify changes in bedrock lithology. The following geophysical methods were used:

- Acoustic caliper;
- Fluid temperature;
- Fluid conductivity;
- Optical televiewer (OTV);
- Acoustic televiewer (ATV);
- Natural gamma ray;
- Spontaneous potential;
- Single point resistance;
- Formation resistivity;
- Heat pulse flow meter (HPFM) under ambient conditions; and
- HPFM under pumping conditions.

The results of borehole geophysical logging are provided as a data report in **Appendix G** and are shown on the Integrated Logs presented in **Appendix I**. A detailed evaluation of the geology and transmissive fracture zones will be provided in the RI Report.

Field activities were coordinated between Glacial Drilling, Hager-Richter Geoscience, and FLUTe of Warminster, Pennsylvania to minimize the duration at which boreholes were open without a liner. Following completion of borehole geophysical logging, blank FLUTe liners equipped with a FACT testing strip were installed at PR79-BR-001 through PR79-BR-005 between July 13, 2020 and July

17, 2020 by FLUTe. Boreholes were therefore open for approximately 1.5 months to allow for development and geophysical testing in June 2020 and July 2020.

The FACT testing strips remained in the borehole between 22 to 26 days, after which they were removed between August 4, 2020 and August 10, 2020. The FACT testing strips were subsequently cut into two-foot segments along the zone of saturation (i.e., from the water table to the borehole bottom) and the segmented FACT samples were shipped to Pace Analytical Laboratory of Greensburg, Pennsylvania for analysis of VOCs via EPA 8260B. A total of 142 samples were submitted from borehole BR-001, 133 from BR-002, 142 from BR-003, 143 from BR-004, and 142 from BR-005. Agraphical depiction of the FACT testing results showing relative distribution of dissolved phase VOCs detected in each borehole is provided as a data report in **Appendix H** and are shown on the Integrated Logs presented in **Appendix I**.

After FACT sampling, transmissivity profiling by FLUTe was performed at PR79-BR-001 through PR79-BR-005 between August 3, 2020 and August 12, 2020. On August 12, 2020, reverse head profiling was attempted by FLUTe at four zones of interest at PR79-BR-005; however, transmissivity was too low to adequately measure vertical head distribution. The results of transmissivity and reverse head profiling are provided as a data report in **Appendix H** and are shown on the Integrated Logs presented in **Appendix** I. Transmissivity information is not complete in the wells due to the slow rate of the liner decent which can be attributed to low transmissivity values at deeper intervals in each borehole. Once the rate of decent drops below 0.001 ft/s, the test is ended. Transmissivity calculations were also completed using FLASH (USGS-based transmissivity calculations) based on heat-pulse flow meter data. The transmissivity calculated using FLASH and heat-pulse flow meter data should be used to supplement the transmissivity profiles produced by FLUTe methods. The FLASH calculated transmissivity is included on the Integrated Logs.

After completing transmissivity and reverse head profiling, the blank FLUTe liners were re-installed into each borehole to provide a seal for minimizing intra-borehole flow between fracture sets while FACT samples were being analyzed and reviewed. Integrated borehole logs showing the relative distribution of dissolved phase VOCs (i.e., TCE, m&p xylenes, and ethylbenzene[1]) are provided in **Appendix I**.

[1] On June 10, 2021, FLUTe reported that trace concentrations of total benzene, toluene, ethylbenzene, and xylenes (BTEX) were identified in three activated carbon quality control samples at concentrations of 566, 1,920 and 2,150 mg/kg. These three quality control samples were collected from the same activated carbon lot recently used in FACT liners that may have been deployed during the 2020 RI. It was further reported by FLUTe that BTEX was not detected in a deionized water sample collected after a two-day leachability test; therefore, potential BTEX from the FACT liner is not expected to have leached into local groundwater (FLUTe, 2021).

AECOM Technical Services Inc. (AECOM) and USACE held a conference call on October 7, 2020 to review geophysical and FACT results and determine construction of the Water FLUTe Multi-Level Sampler (MLS) systems to collect targeted groundwater samples from specific fracture sets of interest. Between one and five sampling ports were selected at each borehole for a total of 17 sampling ports. Well construction information is provided in **Table A-4** and are shown on the Integrated Logs presented in **Appendix** I.

The Water FLUTe MLS systems were constructed based on the following rationale, shown in **Table 5-1.**

5.3 Bedrock Fracture Connection Testing

Water FLUTe MLS systems were installed by FLUTe between December 2, 2020 and December 13, 2020. The installation of the Water FLUTe MLS systems required removing the blank FLUTe liners and replacing them with Water FLUTe MLS liners causing displacement of groundwater within transmissive fracture sets in that borehole. Potential water level changes from this action were measured at nearby bedrock wells by transducer data loggers (e.g., *Seametrics Aqua4 PT2X)* installed at NIKE-1, NIKE-2, ROU-1, ROU-2, ROU-3, ROU-4 to record whole-well water level changes. Additionally, air coupled transducer (ACT) data loggers were attached to the sampling ports of the Water FLUTe MLS system as FLUTe progressed from borehole to borehole during installation to record fracture-specific water level changes.

Transducers were installed at NIKE-1, NIKE-2, ROU-1, ROU-2, ROU-3, ROU-4 on November 30, 2020 and December 1, 2020 by Dependable Pump Repair. Temperature and pressure were recorded every 5 seconds until the transducers were removed after completion of the Water FLUTe MLS system installations on December 13, 2020. On December 11, 2020, the transducers placed at three wells (i.e., ROU-1, NIKE-1, and NIKE-2) were elevated to a shallower depth in the water column by Dependable Pump Repair due to concern that they may be too deep to detect changes in water levels.

A summary of transducer deployments at NIKE-1, NIKE-2, ROU-1, ROU-2, ROU-3, ROU-4 is below in **Table 5-2**.

Table 5-1
Summary of Water FLUTe Multi-Level Sampler (MLS) System Rationale

Well ID	Port ID	Proposed Intervals (ft bgs)		Top of Casing Above Ground Surface (ft)	Proposed Intervals (ft btoc)		Proposed Length (feet)	Rationale
PR79-BR-001	P1	28	38	3.0	31	41	10.0	Shallowest hydraulically active fracture set.
	P2	51	56	3.0	54	59	5	Transmissive fracture set with evidence of TCE in FACT liner sample data.
	P3	100	105	3.0	103	108	5	Deepest hydraulically active fracture.
PR79-BR-002	P1	31.9	41.9	3.1	35	45	10	Shallowest hydraulically active fracture set.
	P2	61.9	66.9	3.1	65	70	5	Transmissive fracture with downward ambient flow. Above where evident TCE in FACT liner sample data.
	P3	76.9	81.9	3.1	80	85	5	Intermediate hydraulically active fracture with evidence of TCE in FACT liner sample data.
	P4	89.9	94.9	3.1	93	98	5	Transmissive fracture with downward ambient flow. Below where evident TCE in FACT liner sample data.
	P5	266.9	271.9	3.1	270	275	5	Deepest potentially hydraulically active fracture for vertical delineation.
PR79-BR-003	P1	13.9	23.9	3.1	17	27	10	Shallowest hydraulically active fracture set.
	P2	48.9	53.9	3.1	52	57	5	Intermediate hydraulically active fracture.
	P3	69.9	74.9	3.1	73	78	5	Intermediate hydraulically active fracture.
	P4	281.9	286.9	3.1	285	290	5	Deepest hydraulically active fracture.
PR79-BR-004	P1	15.7	25.7	2.3	18	28	10	Only hydraulically active fracture set.
PR79-BR-005	P1	27.9	32.9	3.1	31	36	5	Shallowest hydraulically active fracture set.
	P2	46.9	51.9	3.1	50	55	5	Most transmissive fracture set in boring.
	P3	87.9	92.9	3.1	91	96	5	Transmissive fracture with evidence of hydraulic activity under ambient conditions.
	P4	214.9	219.9	3.1	218	223	5	Deepest hydraulically active fracture set.

Note: btoc: Below top of steel casing.

Table 5-2
Summary of Transducer Deployments

Well ID	Date	Depth to Water (feet amsl)	Depth to Transducer (ft btoc)	Depth to Transducer (ft amsl)	Data Logging Schedule
NIKE-1	11/30/2020	545.93	105	501.97	Continuous, 5 seconds*
NIKE-1	12/11/2020	584.34	57	549.97	Continuous, 5 seconds
NIKE-2	11/30/2020	583.37	95	506.87	Continuous, 5 seconds*
NIKE-2	12/11/2020	587.29	50	551.87	Continuous, 5 seconds
ROU-1	12/01/2020	575.38	105	502.39	Continuous, 5 seconds*
ROU-1	12/11/2020	593.14	50	557.39	Continuous, 5 seconds
ROU-2	12/01/2020	482.83	105	456.04	Continuous, 5 seconds
ROU-3	12/01/2020	496.82	105	471.68	Continuous, 5 seconds
ROU-4	12/01/2020	at ground surface	5	no survey data	Continuous, 5 seconds

Notes: Asterisk (*) denotes that transducer detected no change in water level.
ROU-4 is a dug well.
AMSL = above mean sea level

Each water supply well was chlorinated prior to and after use by Dependable Pump Repair. On February 22, 2021, water samples were collected by Dependable Pump Repair from each active water supply well at the point of exposure (i.e., from the kitchen or bathroom faucet) and submitted to New England Testing Laboratory of West Warwick, Rhode Island, a certified laboratory by the State of Rhode Island Department of Health (RIDOH) for analysis of potable water. The water samples were tested for total coliform and E. coli by the Colilert method. Coliform is a nonharmful naturally occurring bacteria; however, a positive coliform result could indicate the presence of other more harmful pathogenic bacteria. Total coliform and E. coli were reported absent in each water sample. The laboratory analytical reports for total coliform and E. coli analysis is provided as **Appendix J**.

Time series graphs showing transducer and ACT data logging information is provided as **Appendix K**. Note that ACTs were not placed in the final borehole as displacement of groundwater in that borehole (i.e., PR79-BR-005) during Water FLUTe MLS liner installation was monitored by ACTs at PR79-BR-001, PR79-BR-002, PR79-BR-003, and PR79-BR-004. Additionally, the time series data for ROU-4 is presented as pressure because no survey data is available to convert measured pressure to groundwater elevation. The measured pressure represents the thickness of the water column above the transducer such that there is a direct correlation between pressure and true groundwater elevation.

For the basis of comparing water level correlation between transmissive fracture sets, the chronology of Water FLUTe MLS system installation activities is summarized below in **Table 5-3**.

Table 5-3
Summary of Water FLUTe MLS System Installation Chronology

Date	Time	Well ID
12/2/2020	0745-1730	PR79-BR-002
12/3/2020	0730-1200	PR79-BR-002
12/3/2020	1430-1615	PR79-BR-001
12/4/2020	0730-1645	PR79-BR-001
12/8/2020	1145-1645	PR79-BR-001
12/9/2020	0800-1130	PR79-BR-001
12/9/2020	1500-1630	PR79-BR-003
12/10/2020	0715-1500	PR79-BR-003
12/10/2020	1245-1500	PR79-BR-004
12/11/2020	0730-1415	PR79-BR-003
12/12/2020	0730-1130	PR79-BR-005
12/12/2020	1500-1630	PR79-BR-004
12/13/2020	0815-1000	PR79-BR-003

Further data evaluation is necessary due to low transmissivity conditions in the bedrock boreholes which presents challenging conditions for assessment of connectivity based on short-term perturbations imposed by Water FLUTe MLS liner raising/lowering events. Observations may also be influenced by active pumping at residential wells where significant drawdown is noted compared to the relatively small-scale fluctuations expected due to Water FLUTe MLS system installation activities. Preliminary observations of the ACT logging data indicate the potential for weak connections. However, FLUTe did note that deeper ACT water levels may not have been in equilibrium based on the very low conductivity of the formation, but displacements in the water level should be useful for evaluation of cross connections. A summary of notable preliminary qualitative observations of groundwater level changes recorded in the existing pumping and non-pumping wells is below:

- NIKE-1 drawdown was observed during December 11, 2020 and December 14, 2020 of approximately 3-4 feet.
- NIKE-2 semi-diurnal groundwater fluctuations were observed at approximately 0.1-0.2 feet with a broader trend of recharge occurring.
- ROU-1 groundwater level fluctuations were observed due to pumping with generally 1 foot of drawdown. One event exhibited a greater 5-6 feet of drawdown.
- ROU-2 groundwater level fluctuations were observed due to pumping with several feet of drawdown. The lower elevation data were cut off at 456 ft elevation likely due to the water level dropping below the cable-hung transducer.

- ROU-3 groundwater level fluctuations were observed due to pumping. Drawdown is generally on the scale of 4-6 feet. A general trend of recharging conditions is noted with maximum water levels increasing during the duration of the deployment.
- ROU-4 identifies undulations in the elevation with at least six discrete drops in pressure.

A detailed quantitative evaluation of water levels will be provided in the RI Report that may use more quantitative time series analysis techniques to evaluate if there are cross connections present. The evaluation will look at the influence of the existing pumping and non-pumping wells in addition to the FLUTe methodology.

5.4 Background Bedrock Groundwater Sampling

One background bedrock groundwater sample (identified as PR79-WL-002) was collected from a nearby inactive water supply well known as DW-69/ST-2 (also referred to as the "Barn Well" or "Artesian Well") that is located north of the Property at 15 Theodore Foster Drive. The location of DW-69/ST-2 is as shown on **Figure 8**.

A background bedrock groundwater sample was collected from DW-69/ST-2 on December 4, 2020 in accordance with the QAPP including *SOP 3-14 Monitoring Well Sampling* and *SOP 3-24 Water Quality Parameter Testing for Groundwater Sampling* with the following exception:

- On December 1, 2020, the well pump was observed to be disconnected from its electrical power source. According to the property owner, DW-69/ST-2 was winterized in 2019 and not used since. On December 4, 2020, power was restored to the well pump by Dependable Pump Repair. To avoid opening the well cap and potentially contaminating DW-69/ST-2 by introducing a bladder pump, the existing well pump was used to purge water for approximately 20 minutes before water quality readings were recorded and the background bedrock groundwater sample collected.
- To avoid opening the well cap and potentially contaminating DW-69/ST-2 by introducing a water level meter, water levels were not measured.

Observations and measurements were recorded on Groundwater Sampling Logs included as **Appendix E.** A summary of water quality parameters is provided in **Table A-7**.

5.4.1 Summary of Detected Analytical Results in Background Bedrock Groundwater Samples

Background bedrock groundwater results were compared to their respective PALs established in the QAPP as presented (detects only) on **Table A-9**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- VOCs were not detected above laboratory detection limits, including methyl tert-butyl ether (MTBE), which was previously detected in a water sample collected at DW-69/ST-2 in 2018 at a concentration of 0.51 µg/L, and in an earlier water sample in 2016 at a concentration of 1 µg/L (USAPHC, 2016).
- Total copper was detected at an estimated concentration (6.30 µg/L) above the associated PAL of 3.1 µg/L. However, dissolved copper was detected at an estimated concentration (3.0 µg/L) slightly below the PAL.

Background bedrock groundwater data will be used for reference as site-specific background levels in the risk assessment to be provided in the RI Report.

5.5 Bedrock Groundwater Sampling

Bedrock groundwater sampling was performed at the 17 sampling ports of the five newly installed Water FLUTe MLS system monitoring wells (identified as PR79-BR-001 and PR79-BR-005) between December 14, 2020 and December 21, 2020. The sampling ports were purged with compressed nitrogen gas using well-specific purging and sampling pressure as prescribed by FLUTe in **Table 5-4** below:

Table 5-4
Water FLUTe MLS System Purge and Sample Pressure

Well ID	Purge Pressure (psi)	Sampling Pressure (psi)
PR79-BR-001	62	46
PR79-BR-002	63	46
PR79-BR-003	59	43
PR79-BR-004	61	46
PR79-BR-005	64	47

A minimum of four purge cycles was achieved prior to groundwater sampling. Groundwater sampling was performed in accordance with the QAPP including *FLUTe Sampling Guidelines for Water FLUTe Systems installed after May, 2009 and SOP 3-24 Water Quality Parameter Testing for Groundwater Sampling* with the following exceptions:

- Due to low surrogate recovery causing the rejection of an SVOC (i.e., pentachlorophenol) result from groundwater samples collected at PR79-BR-002, PR79-BR-003, and PR79-BR-005 on December 18, 2020 and December 21, 2020, a second groundwater sample was collected from each port at those wells on February 10, 2021 and February 11, 2021 for analysis of pentachlorophenol.
- Water levels were measured in each ¼-inch diameter port prior to sampling using a small-diameter *Heron Skinny Dipper™* water level meter; however, due to ice obstructing the liner in February 2021, the water levels at PR79-BR-002 and PR79-BR-003 were unable to be recorded.

Purge cycle information and measurements were recorded on Groundwater Sampling Logs included as **Appendix E.** A summary of water quality parameters is provided in **Table A-7**. A summary of notable observations and measurements are listed below:

- A hydrogen sulfur-like odor (i.e., similar to the smell of rotten eggs) was observed in purge water at PR79-BR-002, PR79-BR-003 and PR79-BR-005 in February 2021.

A summary of bedrock groundwater sample locations and analyses is listed below in **Table 5-5**.

Table 5-5
Summary of Bedrock Groundwater Samples

Well ID	AOC	Analytical Parameter										
		VOCs	SVOCs	Total Metals	Dissolved Metals	TOC	Dissolved Gases	Nitrate Nitrite	Sulfate	Chloride	Sulfide	Alkalinity
PR79-BR-001	AOC-1	X	X	X	X	X	X	X	X	X	X	X
PR79-BR-002		X	X	X	X	X	X	X	X	X	X	X
PR79-BR-003		X	X	X	X	X	X	X	X	X	X	X
PR79-BR-004	Off-Property	X	X	X	X	X	X	X	X	X	X	X
PR79-BR-005		X	X	X	X	X	X	X	X	X	X	X

Note: Ferrous iron measured using a field test kit (e.g. HACH DR890 colorimeter) is provided in **Table A-7**.

5.5.1 Summary of Detected Analytical Results in Bedrock Groundwater Samples

Bedrock groundwater results were compared to their respective PALs established in the QAPP as presented (detects only) on **Table A-9**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below in **Table 5-6.**

- TCE was detected at concentrations above the associated PAL of 0.28 µg/L in groundwater samples collected from several ports at PR79-BR-001, PR79-BR-002, and PR79-BR-003, as shown in the table below in order from highest to lowest concentrations:

Table 5-6
Summary of TCE Detected in Bedrock Groundwater Samples

Well ID	Port ID	Depth/Elevation (feet amsl)		Groundwater Elevation (feet amsl)	TCE (µg/L)	Location / Rationale
PR79-BR-002	P2	557.05	552.05	602.14	100	Located adjacent to the Former Interconnecting Corridor and downgradient of the Former Frequency Changer/Generator Building in AOC-1. Coincides with an area of wet gravel overlaying fractured to heavily fractured rock identified along Hager Geoscience, Inc. (HGI) Seismic Line 100 (HGI, 2017).
PR79-BR-002	P3	542.05	537.05	595.98	79	
PR79-BR-002	P4	529.05	524.05	595.66	60	
PR79-BR-002	P5	352.05	347.05	593.10	2.3	
PR79-BR-001	P2	563.44	558.44	596.76	1.9	Located in helicopter pad in AOC-1 near NIKE-1. Intercepts transmissive north-northeast dipping fractures observed in NIKE-1. Located within the higher overburden hydraulic conductivity area (USACE, 2015).
PR79-BR-002	P1	587.05	577.05	603.67	0.92	See PR79-BR-002 above.
PR79-BR-001	P1	586.44	576.44	600.06	0.87 J	See PR79-BR-001 above.
PR79-BR-001	P3	514.44	509.44	593.06	0.75 J / 0.59 J	
PR79-BR-003	P3	536.87	531.87	593.08	0.52	Located off-Property in the vicinity of ROU-1. Placed downgradient of the higher overburden hydraulic conductivity area in AOC-1 (USACE, 2015) and along the weathered bedrock trough (HGI, 2017).
PR79-BR-003	P4	324.87	319.87	593.23	0.36	
PR79-BR-003	P2	557.87	552.87	594.18	0.088	
PR79-BR-003	P1	592.87	582.87	599.04	ND	See PR79-BR-003 above.

Note: J signifies an estimated value.
AMSL = above mean sea level
ND – Not detected above laboratory detection limit (DL).

TCE was not detected above laboratory detection limits in groundwater samples collected at PR79-BR-004 and PR79-BR-005, which are located over 200 feet southwest and south-southeast, respectively, of well PR79-BR-002, where the highest TCE concentrations have been observed.

- Chloroform was detected at concentrations (ranging from 1.2 to 4.2 µg/L) above the associated PAL of 0.22 µg/L in groundwater samples collected at PR79-BR-001, PR79-BR-002, PR79-BR-003, and PR79-BR-005. Chloroform is a disinfection biproduct from chlorination and chemical breakdown product of chlorinated solvents, such as TCE. It is

unlikely that chlorination of water supply wells on November 30, 2020 and December 15, 2020 contributed to the detection of chloroform in groundwater samples collected at PR79-BR-001, PR79-BR-002, PR79-BR-003, and PR79-BR-005 due to the low transmissivity observed in bedrock and the inferred direction of groundwater flow away from AOC-1. Chloroform was also detected at estimated concentrations (0.22 and 0.36 µg/L) at or above the associated PAL of 0.22 µg/L in groundwater duplicate samples collected at PR79-BR-004. However, these results may be biased high due to the presence of a trace level of chloroform in the equipment blank and an elevated recovery in the initial calibration verification (ICV) standard.

- 1,4-Dioxane was detected at concentrations (ranging from 0.590 to 12 µg/L) above the associated PAL of 0.46 µg/L in 15 of the 17 bedrock groundwater samples. 1,4-Dioxane was not analyzed in groundwater samples collected in the 2013 RI, but was tested and not detected above laboratory detection limits in overburden groundwater samples collected in the 2020 RI. Although 1,4-dioxane was not previously identified as a chemical used at NIKE missile batteries and unlikely to be related to former Department of Defense (DoD) activities (USACE-EMCX, 2003), 1,4-dioxane is known historically to have been used with chlorinated solvents. Trace concentrations of 1-4-dioxane have been documented by FLUTe to leach from the polyvinylidene difluoride (PVDF) tubing of the Water FLUTe MLS system and may be associated with Dawn™ detergent solution spray used by FLUTe for leak detection (FLUTe, 2014)
- Benzene was detected at concentrations (ranging from 0.16 to 0.35 µg/L) below the associated PAL of 0.46 µg/L in several groundwater samples. Similarly, toluene was detected at concentrations (ranging from 1.2 to 34 µg/L) below the associated PAL of 110 µg/L in several groundwater samples. Benzene and toluene have been documented by FLUTe to leach from the urethane coating and inner nylon-11 tubing of the Water FLUTe MLS liners immediately after installation, then decrease over time, as discussed in Subsection 11.6 “Sources of Error” of the QAPP.
- 2-Butanone (MEK) was detected at concentrations (ranging from 5.6 to 400 µg/L) below the associated PAL of 560 µg/L in groundwater samples collected at PR79-BR-002 and PR79-BR-005. The maximum historic concentration of MEK detected in a groundwater sample was estimated at a concentration of 7.2 µg/L collected at PZ-001 on September 16, 2015.
- Acetone was detected at concentrations (ranging from 2.4 to 51 µg/L) below the associated PAL of 1,400 µg/L.
- Antimony, copper, lead, manganese, thallium, and zinc were detected at concentrations above their respective PALs in groundwater samples. Copper, manganese, and zinc, which were also detected in previous groundwater samples (AMEC, 2014b). Constituents

detected at concentrations greater than human health and/or ecological risk-based screening levels will be further evaluated in comparison to site-specific BTVs in the RI Report.

6.0 SURFACE WATER, POREWATER, AND SEDIMENT SAMPLING

A total of 33 co-located surface water, porewater, and sediment sample locations (identified as PR79-WT-001 through PR79-WT-033) were collected between April 27, 2020 and May 21, 2020. Pursuant to the QAPP, sediment samples were collected from the 0-0.5 bgs ft interval, pore water samples were collected from the 0-1 ft bgs interval and surface water samples were collected from the midpoint of the water column. Samples were collected from surface water exposure areas surrounding the Property. Ten of the 33 co-located sample locations (i.e., PR79-WT-024 through PR79-WT-033) were placed in a pre-selected background study area located upstream of Winsor Brook and beyond the limits of the AOCs. The location of the surface water, porewater, and sediment samples are shown on **Figure 9**.

When logistically possible, sample collection occurred beginning from downstream and working upstream in locations where surface water flow direction was clearly identified, minimizing the agitation of sediment and water at shallow locations. Surface water, porewater, and sediment sampling was performed in accordance with the QAPP including *SOP 3-10 Surface Water and Liquid Sampling* with the following exceptions:

- Upstream samples in the background study area were collected before samples further downstream Winsor Brook were collected. Porewater, surface water and sediment samples were not collected in the order prescribed in the SAP due to timing of right of entry access approvals and seasonal vegetation accessibility challenges (leafing out of vegetation creating obstacles to sampling).
- Surface water samples are intended to represent seasonally high baseflow conditions between March through June. Due to approximately 0.32 inches of precipitation[2] in the preceding three days from the time of sampling on April 30, 2020, surface water samples collected that day (i.e., PR79-WT-029, PR79-WT-030, and PR79-WT-031) were placed on hold and re-collected on May 14, 2020 under baseflow conditions. Precipitation data from Stream Gauging Station USGS 01115187 Ponaganset River At South Foster, Rhode Island are shown in **Table 6-1**.

[2] Based on Daily Total Precipitation (inches) at Stream Gauging Station USGS 01115187 Ponaganset River At South Foster, Rhode Island.

- Sampling locations were moved off land parcels without Right-of-Entry agreements in place (e.g., plate 15 parcel 12 on the northern end of Winsor Brook, etc.).
- Manometers were used to gauge water levels from within the depth interval sampled by the Henry sampler. Manometer measurements on the first several samples (i.e., PR79-WT-001 and background samples PR79-WT-024 through PR79-WT-033) were inadvertently missed at the time of sample collection.

The physical characteristics of the sampling locations (e.g., water depth, stream width, etc.) were documented at the time of sampling and can be found in **Appendix L**. A summary of notable observations and measurements are listed below:

- Manometer readings indicated a positive hydrostatic head (i.e., an apparent upflow from sediment pore fluids into surface water that may represent a point of groundwater discharge) at PR79-WT-002, PR79-WT-003, PR79-WT-007, PR79-WT-008, PR79-WT-009, PR79-WT-011, PR79-WT-012, PR79-WT-013, PR79-WT-016, PR79-WT-019, PR79-WT-020, and PR79-WT-022.

A summary of the analyses for surface water, porewater, and sediment samples is listed below in **Table 6-2**.

Table 6-1
Daily Total Precipitation at Stream Gauging Station USGS 01115187

Date	Daily Total Precipitation (inches)	Date	Daily Total Precipitation (inches)	Date	Daily Total Precipitation (inches)
4/1/2020	0	5/1/2020	0.86	6/1/2020	0
4/2/2020	0.12	5/2/2020	0.02	6/2/2020	0
4/3/2020	0.49	5/3/2020	0.01	6/3/2020	0
4/4/2020	0.02	5/4/2020	0.01	6/4/2020	0
4/5/2020	0	5/5/2020	0	6/5/2020	0.11
4/6/2020	0	5/6/2020	0.15	6/6/2020	1.08
4/7/2020	0	5/7/2020	0	6/7/2020	0.01
4/8/2020	0.1	5/8/2020	0.44	6/8/2020	0
4/9/2020	1.03	5/9/2020	0.13	6/9/2020	0
4/10/2020	0.08	5/10/2020	0	6/10/2020	0
4/11/2020	0.01	5/11/2020	0.39	6/11/2020	0.13
4/12/2020	0	5/12/2020	0	6/12/2020	0
4/13/2020	2.07	5/13/2020	0	6/13/2020	0
4/14/2020	0	5/14/2020	0	6/14/2020	0
4/15/2020	0.01	5/15/2020	0.44	6/15/2020	0
4/16/2020	0	5/16/2020	0.21	6/16/2020	0
4/17/2020	0.02	5/17/2020	0	6/17/2020	0
4/18/2020	0.69	5/18/2020	0	6/18/2020	0
4/19/2020	0	5/19/2020	0	6/19/2020	0
4/20/2020	0	5/20/2020	0	6/20/2020	0
4/21/2020	0.77	5/21/2020	0	6/21/2020	0
4/22/2020	0	5/22/2020	0	6/22/2020	0
4/23/2020	0	5/23/2020	0.09	6/23/2020	0
4/24/2020	0.31	5/24/2020	0	6/24/2020	0.14
4/25/2020	0	5/25/2020	0.01	6/25/2020	0
4/26/2020	0.34	5/26/2020	0	6/26/2020	0
4/27/2020	0.16	5/27/2020	0	6/27/2020	0.42
4/28/2020	0.05	5/28/2020	0.03	6/28/2020	0
4/29/2020	0	5/29/2020	0.05	6/29/2020	0.19
4/30/2020	0.32	5/30/2020	0.27	6/30/2020	0.28
		5/31/2020	0		

Table 6-2
Summary of Surface Water, Porewater, and Sediment Samples

Sample ID	Analytical Parameter											
	Surface Water & Porewater					Sediment						
	VOCs	SVOCs	Total Metals	Dissolved Metals	Hardness	VOCs	SVOCs	Metals	AVS/SEM	pH	TOC	Grain Size
PR79-WT-001	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-002	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-003	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-004	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-005	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-006	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-007	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-008	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-009	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-010	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-011	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-012	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-013	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-014	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-015	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-016	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-017	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-018	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-019	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-020	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-021	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-022	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-023	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-024	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-025	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-026	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-027	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-028	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-029	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-030	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-031	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-032	X	X	X	X	X	X	X	X	X	X	X	X
PR79-WT-033	X	X	X	X	X	X	X	X	X	X	X	X

Note: Shaded samples were placed upstream of Winsor Brook in the background study area.

6.1 Summary of Detected Analytical Results in Surface Water Samples

Surface water results were compared to their respective PALs established in the QAPP as presented (detects only) on **Table A-10**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- TCE was detected at concentrations (ranging from 0.012 to 0.1 µg/L) below the associated PAL of 0.6 µg/L in surface water samples collected at PR79-WT-007 and background study area samples PR79-WT-026, PR79-WT-027, and PR79-WT-028. Location PR79-WT-007 is located approximately 1,000 feet southwest of bedrock well PR79-BR-002 where the highest concentrations of TCE have been detected in AOC-1. Locations PR79-WT-026, PR79-WT-027 and PR79-WT-028 are located approximately 2,000 ft northwest of AOC-1. Groundwater flow direction and hydraulic connectivity will be further evaluated as part of the RI Report to determine whether or not groundwater from AOC-1 is discharging at these locations.
- Other VOCs (i.e., chloroform, acetone, toluene, and methylene chloride) were detected at concentrations below their respective PALs in several surface water samples, including surface water samples collected in the background study area.
- Chrysene was detected at estimated concentrations (ranging from 0.038 to 0.049 µg/L) at or above the associated PAL of 0.038 µg/L in surface water samples collected at PR79-WT-014, PR-79-WT-020, and PR79-WT-022 located in a wetland complex, an outflowing stream, and stream culvert south of the Property. These results are below the laboratory's limit of detection (LOD) and are considered estimated.
- Several SVOCs (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene) were detected at estimated concentrations above their respective PALs in surface water samples collected at PR79-WT-017, PR79-WT-022, and background study area sample at PR79-WT-024. These results are below the laboratory's LOD and are considered estimated.
- Several metals (i.e, aluminum, beryllium, copper, iron, lead, magnesium, manganese, silver, and thallium) were detected at concentrations above their respective PALs in surface water samples, including surface water samples collected in the background study area. Constituents detected at concentrations greater than human health and/or ecological risk-based screening levels will be further evaluated in comparison to site-specific BTVs in the RI Report.

6.2 Summary of Detected Analytical Results in Porewater Samples

Porewater results were compared to their respective PALs established in the QAPP as presented (detects only) on **Table A-11**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- TCE was detected at estimated concentrations (0.0230 and 0.0300 µg/L) below the associated PAL of 43 µg/L in porewater samples collected at PR79-WT-007 and PR79-WT-013, respectively.
- Toluene was detected at an estimated concentration (1.1 µg/L) below the associated PAL of 14 µg/L in the porewater sample collected at PR79-WT-013.
- Acetone was detected at concentrations (ranging from 2.2 and 9.7 µg/L) below the associated PAL of 1,700 µg/L in several porewater samples.
- Chloroform was detected at concentrations (ranging from 0.018 and 0.03 µg/L) below the associated PAL of 32 µg/L in several porewater samples. Chloroform is a disinfection biproduct from chlorination and chemical breakdown product of chlorinated solvents, such as TCE.
- Benzo(k)fluoranthene was detected at an estimated concentration (0.065 µg/L) slightly above the associated PAL of 0.06 µg/L in a background study area sample at PR79-WT-028. Other SVOCs (i.e., benzo(k)fluoranthene, chrysene, and 1,4-dioxane) were detected at estimated concentrations below their respective PALs in porewater samples collected at PR79-WT-003 and background study area sample PR79-WT-029.
- Several metals (i.e., aluminum, beryllium, copper, iron, lead, and manganese, silver, and vanadium) were detected at concentrations above their respective PALs in porewater samples, including porewater samples collected in the background study area. Constituents detected at concentrations greater than human health and/or ecological risk-based screening levels will be further evaluated in comparison to site-specific BTVs in the RI Report.

6.3 Summary of Detected Analytical Results in Sediment Samples

Sediment results were compared to their respective PALs established in the QAPP as presented (detects only) on **Table A-12**. Laboratory analytical reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- Toluene was detected at a concentration (0.014 mg/kg) above the associated PAL of 0.01 mg/kg in a sediment sample collected at PR79-WT-022. PR79-WT-022 is in a stream culvert located upstream of a pond next to Winsor Road, which appears to originate from a wetland complex south of the Property and may interact with potential seeps. Benzene and 1,2,4-trimethylbenzene were also detected at estimated concentrations (0.0014 and

0.0048 mg/kg, respectively) below their respective PALs in the sediment sample collected at PR79-WT-022. The maximum historic concentration of toluene detected in sediment was at a concentration of 0.156 mg/kg in a sediment sample collected at SD-008 on June 27, 2013 (AMEC, 2014b). SD-008 is located in a stream also originating from the wetland complex.

- Acetone was detected at estimated concentrations (ranging from 0.074 and 0.75 mg/kg) above the associated PAL of 0.065 mg/kg in several sediment samples, including sediment samples collected in the background study area.
- Other VOCs (i.e., MEK and carbon disulfide) were detected at estimated concentrations below their respective PALs in several sediment samples, including sediment samples collected in the background study area. MEK is a common laboratory contaminant that was detected below or slightly above the laboratory's LOQ; and all carbon disulfide detections were less than the LOQ.
- Benzo(b)fluoranthene was detected at an estimated concentration (0.2 mg/kg) slightly above the associated PAL of 0.19 mg/kg in a sediment sample collected at PR79-WT-021. SVOCs (i.e., 1,4-dioxane, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene) were detected at estimated concentrations below their associated PALs in several other sediment samples, including sediment samples collected in the background study area. More than 95% of these low-level detections were less than the LOQ and are considered estimated concentrations.
- Several metals (i.e, aluminum, arsenic, barium, beryllium, cobalt, iron, lead, manganese, selenium, silver, thallium, and vanadium) were detected at concentrations above their respective PALs in sediment samples, including sediment samples collected in the background study area. Constituents detected at concentrations greater than human health and/or ecological risk-based screening levels will be further evaluated in comparison to site-specific BTVs in the RI Report

7.0 WATER SUPPLY WELL SAMPLING

Water supply samples were collected from the kitchen/bathroom faucet or outside spigot at 13 water supply wells located on or near the Property between November 30, 2020 and December 3, 2020. Supply well locations are shown on **Figure 7**. Where privately owned and maintained filtration systems existed at DW-19, DW-20, DW-31, DW-35, a second water sample was collected before filtration. Where government-maintained point-of-entry treatment (POET) duel carbon filtration systems existed at NIKE-1, ROU-1, ROU-2, and ROU-3, a total of three water samples were collected

(i.e., a sample before the carbon filters, a sample between the carbon filters, and a sample at the tap). Each water sample was analyzed for VOCs. Additionally, each water sample collected at NIKE-1, ROU-1, ROU-2, and ROU-3 was analyzed for SVOCs to assess if the former leaking heating-oil UST adjacent to the Former Mess Hall building on the Property had impacted the water supply. Water supply sample collection and analysis was performed in accordance with the QAPP.

7.1 Summary of Detected Analytical Results in Water Supply Samples

Water supply results were compared to the U.S. Environmental Protection Agency (USEPA) Safe Water Drinking Act (SWDA) Maximum Contaminant Level (MCL). All VOC and SVOC concentrations were either not detected above laboratory detection limits or were detected at estimated concentrations below the SWDA MCL in samples collected at the tap. Drinking water supply laboratory results (detects only) are presented on **Table A-13**. Laboratory reports are provided in **Appendix O**. A summary of notable laboratory detections is below:

- TCE was detected at concentrations (8.8/9.3 µg/L) above the associated SWDA MCL of 5 µg/L in duplicate water samples collected before carbon filtration at NIKE-1, but was detected at an estimated concentration (0.19 µg/L) below the SWDA MCL of 5 µg/L in a water sample collected between the carbon filters. TCE was not detected above the laboratory detection limit in a water sample collected at the bathroom faucet. The maximum historic concentration of TCE detected at NIKE-1 was in a water sample collected before carbon filtration at a concentration of 12.5 µg/L in August 2012.
- TCE was detected at an estimated concentration (0.23 µg/L) below the SWDA MCL of 5 µg/L in a water sample collected before carbon filtration at ROU-1, but was not detected above the laboratory detection limit in a water sample collected between the carbon filters. The maximum historic concentration of TCE detected at ROU-1 was in a water sample collected before carbon filtration at a concentration of 9 µg/L in August 2012.
- TCE was detected at an estimated concentration (0.22 µg/L) below the SWDA MCL of 5 µg/L in a water sample collected before carbon filtration at ROU-2, but was not detected above the laboratory detection limit in a water sample collected between the carbon filters. The maximum historic concentration of TCE detected at ROU-2 was in a water sample collected before carbon filtration at a concentration of 1 µg/L in August 2012.
- TCE was detected at a concentration (3.1 µg/L) below the SWDA MCL of 5 µg/L in a water sample collected before carbon filtration at ROU-3, but was not detected above the laboratory detection limit in a water sample collected between the carbon filters. The maximum historic concentration of TCE detected at ROU-3 was in a water sample collected before carbon filtration at a concentration of 4.2 µg/L in August 2012.

- TCE was detected at an estimated concentration (0.19 µg/L) below the SWDA MCL of 5 µg/L in a water sample collected from the kitchen tap at DW-39. The maximum historic concentration of TCE detected at DW-39 was in a water sample collected from the kitchen tap at an estimated concentration of 0.1 µg/L in June 2010.
- Cis-1,2-Dichloroethene (cis-1,2-DCE) was detected at an estimated concentration (0.18 µg/L) below the SWDA MCL of 70 µg/L in duplicate samples collected before carbon filtration at NIKE-1, but was not detected above the laboratory detection limit in a water sample collected between the carbon filters.
- Cis-1,2-DCE was detected at an estimated concentration (0.46 µg/L) below the SWDA MCL of 70 µg/L in a sample collected before filtration at ROU-3, but was not detected above the laboratory detection limit in a water sample collected between the carbon filters.
- Benzene was detected at an estimated concentration (0.053 µg/L) below the SWDA MCL of 5 µg/L in a sample collected between the carbon filters at NIKE-1, but was not detected above the laboratory detection limit in water samples collected before filtration and from the bathroom faucet.
- Benzene was detected at concentrations (0.14 and 0.62 µg/L) below the SWDA MCL of 5 µg/L in water samples collected before filtration and between the carbon filters, respectively, at ROU-1. Benzene was not detected above the laboratory detection limit in a water sample collected from the kitchen faucet at ROU-1.
- Benzene was detected at a concentration (0.9 µg/L) below the SWDA MCL of 5 µg/L in a water sample collected before filtration at ROU-2, but was not detected above the laboratory detection limit in a water sample collected between the carbon filters.
- Other VOCs (i.e., chloroform, acetone, MEK, isopropylbenzene, and toluene) were detected at low-level concentrations below their associated SWDA MCLs (or alternatively the tapwater USEPA Regional Screening Levels (RSLs) for acetone, MEK, and isopropylbenzene because there is no established SWDA MCLs for those compounds) in water samples collected at NIKE-1, ROU-1, ROU-2, ROU-3, DW-19, DW-31, and/or DW-39. To avoid a potential source of data error, water supply well samples were collected at NIKE-1, ROU-1, ROU-2, and ROU-3 before well caps being opened to install transducers and chlorinated on November 30, 2020.
- One SVOC (i.e., bis(2-ethylhexyl) phthalate (BEHP)) was detected at estimated concentrations in water samples collected at ROU-1 (3 µg/L), ROU-2 (4.2 µg/L), and ROU-3 (2.2 µg/L) below the SWDA MCLs of 6 µg/L. BEHP was detected at a concentration below the SWDA MCLs of 6 µg/L in water samples collected from the tap at ROU-2 (4.2 µg/L) and ROU-3 (1.3 µg/L). BEHP detections were not replicated in pre-filtration water samples collected from NIKE-1, ROU-1, ROU-2, and ROU-3 in September 2020 by Alliance

Environmental Group (Alliance, 2020). BEHP was historically detected in groundwater samples collected in 2013 at PZ-007 (2 µg/L), PZ-011 (3.2 µg/L), and PZ-003 (81.9 µg/L) (AMEC, 2014a). The 2013 RI Report concluded that these BEHP detections in these groundwater samples were due to laboratory contamination. Phthalates (e.g., BEHP) were not identified as chemicals used at NIKE missile batteries and unlikely to be related to former DoD activities; therefore, BEHP was not tested in soil and groundwater samples collected in the 2020 RI phase field activities (USACE-EMCX, 2003).

8.0 SUMMARY OF UNDERGROUND STORAGE TANK CLOSURES – RIDEM UST-2763/1211-ST

This section summarizes the results of heating oil UST removals conducted by the Town of Foster at the property.

8.1 Former Mess Hall Building UST - 2019

On September 3, 2019, a leaking 2,000-gallon No. 2 heating oil UST located adjacent to the Former Mess Hall building was abandoned by Alliance Environmental Group as contractor for the Town of Foster. The UST was transferred to the Town of Foster for beneficial reuse in 1965. The UST was reportedly leaking since at least November 2018.

Based on the UST Closure Assessment Report dated October 2019, the steel tank and 18.46 tons of No. 2 heating oil-impacted soil was excavated and removed for off-site disposal (Alliance, 2019). The dimensions of the excavation were approximately 12 feet by 14 feet with a depth of approximately 10 feet bgs. The groundwater table was encountered at approximately 8 feet bgs with the top of bedrock encountered at approximately 11 feet bgs. A corroded hole in the base of the tank at its southern end (i.e., nearest the building) was observed and soil screened near the building chimney measured a maximum PID reading of 25.8 ppm. Additional excavation could not be conducted near the building due to structural concerns of undermining the chimney.

Eight confirmatory soil samples from the sidewalls, endwalls, and bottom of the UST excavation were collected for analysis of total petroleum hydrocarbons (TPH) and VOCs. A summary of confirmatory soil sample results is below:

- TPH was detected in confirmatory soil sample S-3 located adjacent to the building chimney at a concentration of 358 mg/kg. TPH was also detected in soil sample S-8 located approximately 6 feet northeast of the building chimney at a concentration of 99 mg/kg.

- Sec-butylbenzene, n-butylbenzene, p-isopropyltoluene and 1,2,4-trimethylbenzene were detected in confirmatory soil sample S-3 at concentrations of 0.194, 0.662, 0.230, and 0.172 mg/kg, respectively.

Alliance Environmental Group concluded that analytical results from confirmatory soil samples were below the RIDEM GA groundwater classification criteria and additional investigation or remedial work was not necessary.

8.2 Former Barracks and Administration Building USTs - 2020

On December 16, 2019, two former No. 2 heating oil USTs were removed under the direction of Alliance Environmental Group as contractor for the Town of Foster. According to the UST Closure Assessment Report dated January 24, 2020, the former USTs were located adjacent to two former buildings located at the property (foundation slabs still present) and were designated as the “eastern” and “western” USTs in that report. The western UST was associated with the former Barracks Building and the eastern UST was associated with the former Administration Building. Information provided to Alliance indicated that the UST were likely installed between 1952 and 1955 during building construction and product may have been removed from the two USTs in 1964 when the facility was decommissioned.

Due to the cold weather, field screening primarily relied on visual and olfactory observations of impacted soil, supported by PID readings.

Western UST

The western UST, associated former Barracks Building, was an approximately 1,800-gallon capacity steel tank. There was no product present in the UST at time of closure but it did contain water and a “pin hole” was observed in the wall of the UST upon removal. The bottom of the UST was approximately 7.5 feet below grade, which was above the depth of the groundwater table at the time of removal (8 feet). No sheen or product was observed on the groundwater surface and no visual or olfactory indications of soil impacts were observed. All PID readings from sidewall and base soil samples were <1 ppm.

Six confirmatory soil samples from the sidewalls, endwalls, and bottom of the UST excavation were collected for analysis of total petroleum hydrocarbons (TPH) and VOCs. A summary of confirmatory soil sample results is below:

- TPH was detected in all six confirmatory soil samples ranging from 169 to 751 mg/kg. TPH exceeded the RIDEM Residential Direct Exposure Criteria and GA Leachability Criteria of 500 mg/kg in both bottom samples.
- No VOCs were detected above laboratory detection limits in any soil samples.

Eastern UST

The eastern UST, associated with the former Administration Building, was an approximately 1,300-gallon capacity steel tank. There was no product present in the UST at time of closure but it did contain water. No corrosion holes were apparent in the UST upon removal. The bottom of the UST was approximately 7.5 feet below grade and the groundwater table at the time of removal was approximately 4 to 5 feet. No sheen was observed on the groundwater surface. Ledge was observed within the tank grave (bottom and southern sidewall at 4 feet) indicating the grave may have been blasted out of bedrock. A total of 15.56 tons of No. 2 heating oil-impacted soil exhibiting visual and olfactory indications of petroleum impact was removed from the eastern UST grave for off-site disposal (Alliance, 2020). Soil was removed to the bedrock surface. All PID readings from sidewall and base soil samples were <1 ppm, with the exception of the soil sample from the southern sidewall which exhibited a PID reading of 14.8 ppm.

Six confirmatory soil samples from the sidewalls, endwalls, and bottom of the UST excavation were collected for analysis of TPH and VOCs. A summary of confirmatory soil sample results is below:

- TPH was non-detect in the east and south sidewall samples. TPH was detected in the west and north sidewalls and the two bottom samples ranging from 263 to 508 mg/kg. TPH exceeded the RIDEM Residential Direct Exposure Criteria and GA Leachability Criteria of 500 mg/kg in one of the bottom samples.
- No VOCs were detected above laboratory detection limits in any soil samples.

A total of 1,022 gallons of water, residual product and sludge were removed from the two USTs and the eastern UST tank grave for off-site disposal. Alliance Environmental Group recommended that groundwater monitoring wells be installed adjacent to both UST graves based on the exceedances of soil GA Leachability standards for TPH. They also recommended that the on-site private water supply well be sampled for TPH and VOCs.

9.0 SURVEYING

Surveying the two newly installed stream gauging stations and newly installed wells, consisting of eight overburden monitoring wells and five bedrock monitoring wells, was performed between December 14, 2020 and December 22, 2020 by GM2 Associates of Providence Rhode Island, a licensed professional land surveyor in Rhode Island. Note that historical locations PZ-001, PZ-005, PZ-007, PZ-010, and PZ-014 that were sampled during the RI were not re-surveyed as part of the survey conducted in December 2020. The professional survey was recorded using Rhode Island State Plane (NAD83) and NAV88 to a vertical accuracy of approximately 0.01 feet. Other points (i.e., sediment, soil boring, and geophysical identified features, etc.) were located using a handheld Global Positioning System (GPS) Trimble™ Geo 7x unit by NAD83 and NAV88 with an approximate postprocessing accuracy of less than a foot. Geographic Information System (GIS) maps were updated based on the coordinates collected. Surveying was conducted in accordance with the QAPP including *SOP 3-07 Land Surveying*. Survey data is provided in **Appendix M**.

10.0 INVESTIGATION DERIVED WASTE MANAGEMENT

Investigation Derived Waste (IDW) generated during 2020 RI phase field activities was containerized, stored, labeled, transported, and disposed in accordance with the QAPP including *SOP 3-05 Investigation-Derived Waste Management.* Transportation and disposal of IDW consisting of groundwater, soil, rock, personal protective equipment (PPE), plastic sheeting, liners, etc. was performed by Global Remediation of East Taunton, Massachusetts. IDW documentation is provided in **Appendix N**.

A summary of the IDW transported and disposed during the 2020 RI is below in **Table 10-1**.

Table 10-1
Summary of Investigation Derived Waste

Media	Date	Container Quantity	Container Type	Weight	Unit
PPE & Plastic	8/24/2020	6	Drum	450	Pounds
PPE & Plastic	1/14/21	2	Drum	150	Pounds
TOTAL				**600**	**Pounds**
Drill Cuttings	8/24/2020	54	Drum	37,800	Pounds
Drill Cuttings	1/14/21	11	Drum	8,000	Pounds
TOTAL				**45,800**	**Pounds**
Waste Water	12/19/2020	1	Vac Truck	7,986	Gallons
Waste Water	12/19/2020	1	Vac Truck	2,971	Gallons
Waste Water	12/22/2020	1	Vac Truck	1,500	Gallons
Waste Water	2/19/2021	1	Drum	400 or ≈ 48	Pounds Gallons
TOTAL				**12,505**	**Gallons**

11.0 LABORATORY DATA MANAGEMENT

11.1 Formerly Used Defense Sites Chemical Database Online

Laboratory analytical data from 2020 RI phase field activities was managed through the Formerly Used Defense Sites Chemical Database Online (FUDSChem) system under the *D01RI0063-02 Nike PR-79 (AECOM)* project file.

Laboratory data were tracked from the sampling event planning phase through the completion of validation through the FUDSChem database. Laboratory data were directly uploaded to the FUDSChem database by the laboratory (i.e., Katahdin Analytical Services of Scarborough, Maine). With the exception of grain size results, Electronic Data Deliverables (EDDs) were submitted to the database in Staged Electronic Data Deliverable (SEDD) 2a format. Data collected in the field during 2020 RI phase field activities such as water quality parameters and water level elevations were entered into the FUDSChem database as Environmental Measurement Information (EMI) files.

11.2 Data Review and Validation

Prior to data validation, electronic laboratory data was verified for accuracy against the hardcopy laboratory report, and the electronic QAPP (eQAPP) was established using the project-specific criteria defined in the QAPP. Laboratory calibration was assessed against the criteria presented in the QAPP where applicable to the stage of validation.

Upon the successful upload of SEDD files to FUDSChem by the analytical laboratory, data was verified and partially validated with the Automated Data Review (ADR) software utilizing the project eQAPP. The Project Chemist then verified the validation conducted by ADR and augmented with manual validation as needed for the stage of validation selected. Note that any indication of bias that was applied during validation is not presented in the tables in Appendix A. Refer to Appendix P Data Validation Memoranda reports for details. To assess whether the analytical results meet the project quality objectives, the laboratory data underwent verification and validation as cited in the QAPP, with the exception that all data from the groundwater resampling event and all residential drinking water samples were validated to Stage 2B. Laboratory analytical reports are provided in **Appendix O**. Data validation memoranda are provided in **Appendix P**.

11.3 Data Usability Assessment

Overall Assessment

The project data usability was assessed based on precision, accuracy, representativeness, comparability, completeness, and sensitivity. This assessment was based primarily on the results of the data validation which indicate that in general, the analytical data were of sufficient quality to meet project objectives and inform project decisions. A limited number of data points (53 of 22,984 results), representing 0.2% of the analytical data were rejected due to serious QC nonconformances and are not usable for project decisions. In addition, approximately four percent of the results were negated due to evidence of possible contamination in the field or laboratory, and 9.8% of the data were estimated due to various QC nonconformances

Precision is a measure of the degree to which two or more measurements are in agreement. Field precision was assessed through the collection and measurement of field duplicates. Precision was measured by calculating relative percent difference (RPD) for duplicate samples, either as Matrix Spike/Matrix Spike Duplicates (MS/MSDs) or as laboratory duplicates. The objective for field precision RPDs was <50% RPD for solid samples, and <30% RPD for aqueous samples if both results were reported at greater than five times the limit of quantitation (LOQ), or an absolute difference of ≤ 2x LOQ if one or both results were less than 5x LOQ. Field duplicate precision criteria were met for more than 99 percent of the field duplicate results, with only 0.35 percent of field sample results being qualified on this basis. Field duplicate frequency is detailed in Section 2.2, above, and met or exceeded the planned frequency of 10 percent for all matrices with the exception of surface water for which 65 field samples and six field duplicate samples were collected.

Objectives for laboratory precision varied by matrix and analysis as detailed in the QAPP. Laboratory precision was generally acceptable with fewer than one percent of the data points qualified for laboratory RPD exceedances.

Accuracy is the degree of agreement between the observed value and an accepted reference or true value. Accuracy in the field was assessed using negative controls such as trip blanks and equipment blanks and by adhering to all sample handling, preservation, and holding time requirements. The objective for trip blanks and equipment blanks was that no target compounds should be present at levels > ½ LOQ. Laboratory accuracy was assessed through the analysis of laboratory method blanks as negative controls, and spiked samples such as MS/MSDs, laboratory control samples (LCSs), and surrogate compounds, as positive controls. The objective for method blanks was that no target compounds should be present at levels > ½ LOQ. Calibration data and internal standard results were also reviewed to assess accuracy.

Laboratory accuracy was acceptable overall. Approximately 10 percent of the data points were qualified as estimated and four percent were negated based on minor nonconformances of the parameters listed above. The most frequent reasons for estimation were nonconforming surrogate recoveries (3.7%), LCS recoveries (1.6%), and initial and continuing calibration verification (ICV/CCV) recoveries (1.2%). More than 90 percent of the negated results were due to low level metals contamination in laboratory method blanks or equipment blanks.

Specific details are provided in the individual data validation memos.

Less than one quarter of one percent of all results were rejected due to severe QC nonconformances. This rejection rate is low and within the expected range for a project of this size and would not be of concern if the rejected results were randomly distributed among the results. However, of the 53 rejected results, 34 of these are for pentachlorophenol. Further inspection of these data reveals that almost half of the pentachlorophenol in groundwater results (23 of 57) were rejected, suggesting a data gap that needs to be addressed. The table below presents all rejected data points.

Table 11-1
Summary of Rejected Data

Sample ID	Test Method	Matrix	Analyte	Reason
PR79-WT-009-SD-01	AVS	Sediment	Sulfide	MS/MSD Recovery
PR79-WT-012-SD-01	AVS	Sediment	Sulfide	MS/MSD Recovery
PR79-WT-013-SD-01	AVS	Sediment	Sulfide	MS/MSD Recovery
PR79-WT-022-SD-01	AVS	Sediment	Sulfide	MS/MSD Recovery
BR-DUP-01-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-BR-002-P1-01	BNASIM	Groundwater	Pentachlorophenol	LCS, MS/MSD, and Surrogate Recovery
PR79-BR-002-P2-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-002-P3-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-002-P3-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-BR-002-P4-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-002-P4-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-BR-002-P5-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-003-P1-01	BNASIM	Groundwater	Pentachlorophenol	LCS, MS/MSD, and Surrogate Recovery
PR79-BR-003-P2-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-003-P3-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-003-P3-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-BR-003-P4-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-003-P4-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-BR-005-P1-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-005-P2-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-005-P3-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-005-P4-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-BR-005-P4-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-GW-FD03-01	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-GW-FD05-01	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-MW-007-01	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-MW-007-01-R	BNASIM	Groundwater	Pentachlorophenol	Surrogate Recovery
PR79-PW-FD04-01	BNASIM	Porewater	Pentachlorophenol	LCS Recovery
PR79-SW-FD04-01	BNASIM	Surface Water	Pentachlorophenol	LCS Recovery
PR79-WT-001-SW-01	BNASIM	Surface Water	Pentachlorophenol	LCS and Surrogate Recovery
PR79-WT-009-SW-01	BNASIM	Surface Water	Pentachlorophenol	Surrogate Recovery
PR79-WT-010-SD-01	BNASIM	Sediment	Benzo(g,h,i)perylene	Internal Standard Recovery
PR79-WT-010-SD-01	BNASIM	Sediment	Dibenz(a,h)anthracene	Internal Standard Recovery
PR79-WT-010-SD-01	BNASIM	Sediment	Indeno(1,2,3-c,d)pyrene	Internal Standard Recovery

Sample ID	Test Method	Matrix	Analyte	Reason
PR79-WT-010-SW-01	BNASIM	Surface Water	Pentachlorophenol	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	1,4-Dioxane (p-Dioxane)	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	2-Methylnaphthalene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Acenaphthene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Acenaphthylene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Anthracene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Benzo(a)anthracene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Fluoranthene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Fluorene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Naphthalene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Phenanthrene	Surrogate Recovery
PR79-WT-022-SW-01	BNASIM	Surface Water	Pyrene	Surrogate Recovery
PR79-WT-029-SW-01-R	BNASIM	Surface Water	Pentachlorophenol	Surrogate Recovery
PR79-WT-031-SW-01-R	BNASIM	Surface Water	Pentachlorophenol	Surrogate Recovery
PR79-WT-033-PW-01	BNASIM	Porewater	Pentachlorophenol	LCS Recovery
PR79-WT-033-SW-01	BNASIM	Surface Water	Pentachlorophenol	LCS Recovery
ROU-1-BC_DEC2020	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
ROU-2-AC_DEC2020	BNASIM	Groundwater	Pentachlorophenol	LCS and Surrogate Recovery
PR79-SB-118-BS-01	SW6020A	Subsurface Soil	Antimony	MS/MSD Recovery

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition within a defined spatial and/or temporal boundary.

Comparability expresses the confidence with which one data set can be compared to another.

Comparability and representativeness were achieved for this PDI through the use of approved EPA methods and proper sampling procedures as prescribed in AECOM SOPs. Field duplicate precision also provides a measure of representativeness and comparability.

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under normal conditions, defined as the conditions expected if the sampling plan were implemented as planned. Analytical completeness was deemed to be greater than 99.5% since only 53 of 22,984 data points were rejected and deemed unusable.

12.0 DATA GAPS AND RECOMMENDATIONS

Based on the 2020 RI phase field activity preliminary findings, the following data gaps and recommendations to address those identified data gaps are below. A more detailed data gaps scope of work will be provided separately for USACE review.

- Several monitoring wells were dry when water levels were measured in Summer 2020 and Fall 2020. To further evaluate seasonal fluctuation in water levels and potential for migration through overburden materials, collection of synchronous water level measurements seasonally (spring, summer, fall, and winter) is recommended.
- Overburden monitoring well PR79-MW-008 was dry when groundwater sampling was attempted in Fall 2020 and Winter 2021. PR79-MW-008 is currently the only overburden monitoring well located in AOC-4 to evaluate groundwater conditions in that AOC. Another groundwater sampling attempt at PR79-MW-008 is recommended during a period of elevated water elevations. If a groundwater sample cannot be collected, then alternatively, a surface water and porewater sample is recommended at the base of the slope immediately west of PR79-MW-008 to assess water quality emanating from AOC-4.
- Confirmatory sampling of the five existing piezometers, eight overburden wells that were installed during the RI, and five bedrock wells that were installed during the RI is recommended for the spring and the fall to supplement the RI risk assessment data set.
- The RI Report will further evaluate the saturated thickness of overburden, stratigraphy, and hydrogeology of the hilltop to determine the extent and possible migration pathways for TCE detected in overburden groundwater at AOC-1. Seasonal water level information will support this evaluation. Additional exploratory soil borings may be necessary to better define the extent and potential migration of TCE in overburden groundwater and into bedrock from the probable source area around PR79-MW-003.
- The RI Report will further evaluate potential transport pathways in transmissive fracture zones for TCE from the probable source area around PR79-BR-002 to NIKE-1, ROU-1, ROU-2, and ROU-3.
- Additional soil, sediment, porewater and surface water sampling may be warranted to supplement the RI risk assessment and background evaluation.

13.0 REMEDIAL INVESTIGATION REPORT PREPARATION

A CERCLA-compliant RI Report will be prepared that includes a refined Conceptual Site Model (CSM) and human health and screening-level ecological risk assessments. The RI Report will include the following elements:

- Restatement of the study goals;
- Facility background, environmental setting, previous investigations, and current and future land use;
- Physical characteristics of the study area, including soils, geology, hydrogeology, hydrology, and ecological setting;
- Tables summarizing the samples collected and sample analytical data;
- Figures showing the layout of each sampling area, updated features, results of geophysical investigations, soil boring locations, and summaries of pertinent analytical results;
- Fate and transport discussion, including potential routes of migration, constituents of potential concern (COPC) persistence, and COPC migration;
- Data evaluation and identification of critical data gaps;
- Summary of the areas with COPCs identified as being detected above human health and/or ecological screening levels and BTVs; and,
- Recommendation of whether further investigation, consisting of un-biased, exposure-based sampling and additional site-specific risk assessment is needed.

14.0 REFERENCES

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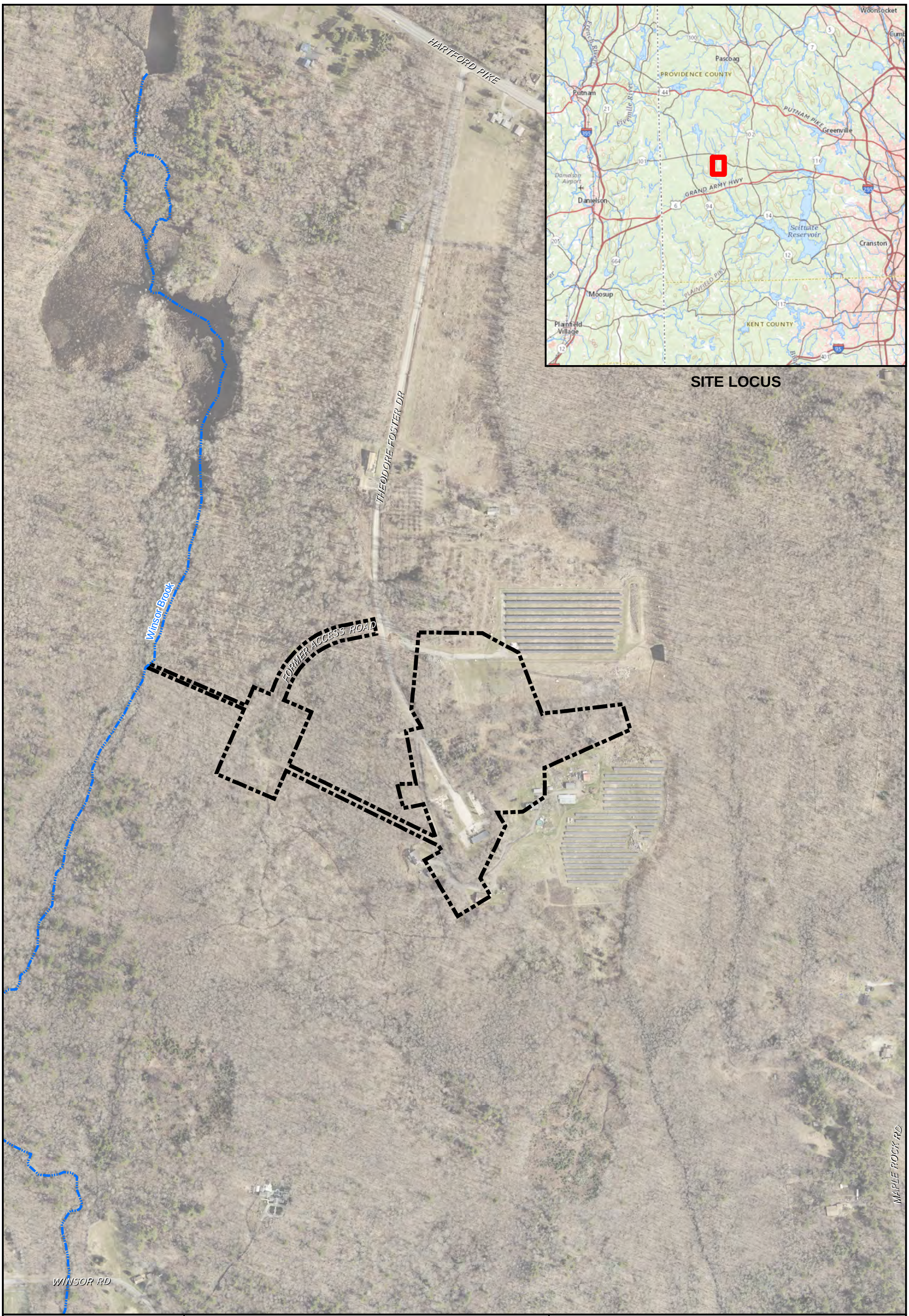
Figures



AECOM

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Legend

Extent of Former NIKE PR-79 Control Area (USAGC, 2015)

Source
Othroimagery from RIGIS, 04/2020

N

0 215 430 Feet

FIGURE 1
SITE LOCATION

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

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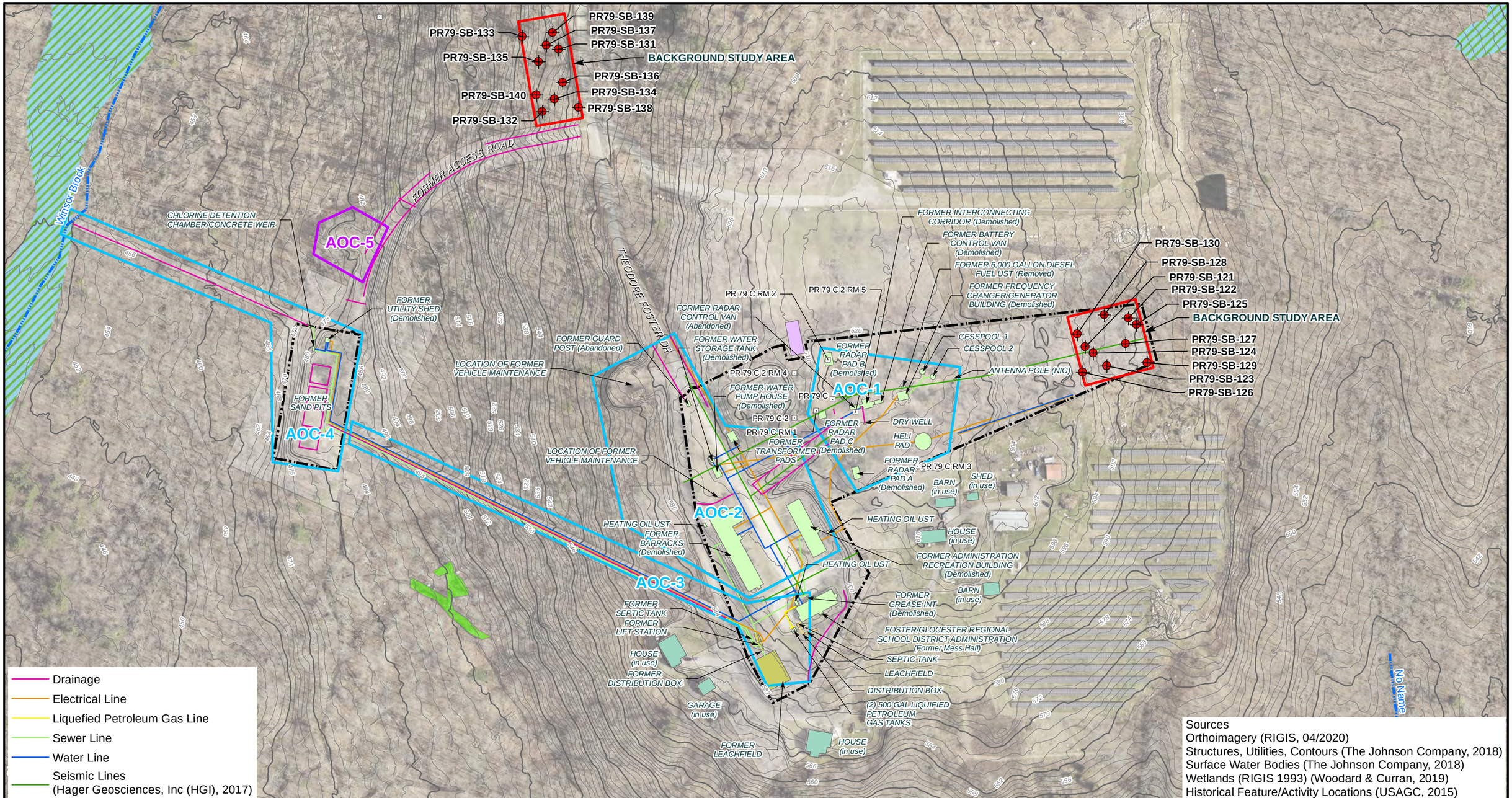

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Legend

- Background Sample Location
- Area of Concern (AOC)
- Area of Concern (AOC) (Non-Government)
- Background Study Area
- Geodetic Control Station (National Geodetic Survey)
- Stream
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Cemetery
- Former Sewer and Stormwater Structures
- Existing Sewer Structures
- Wetland (Woodard & Curran, 2019)
- Wetlands (RIGIS 1993)
- Existing Sewer Line
- Index Contour
- Intermediate Contour

0 100 200
Scale in Feet

N

FIGURE 2
BACKGROUND STUDY AREA LOCATIONS

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

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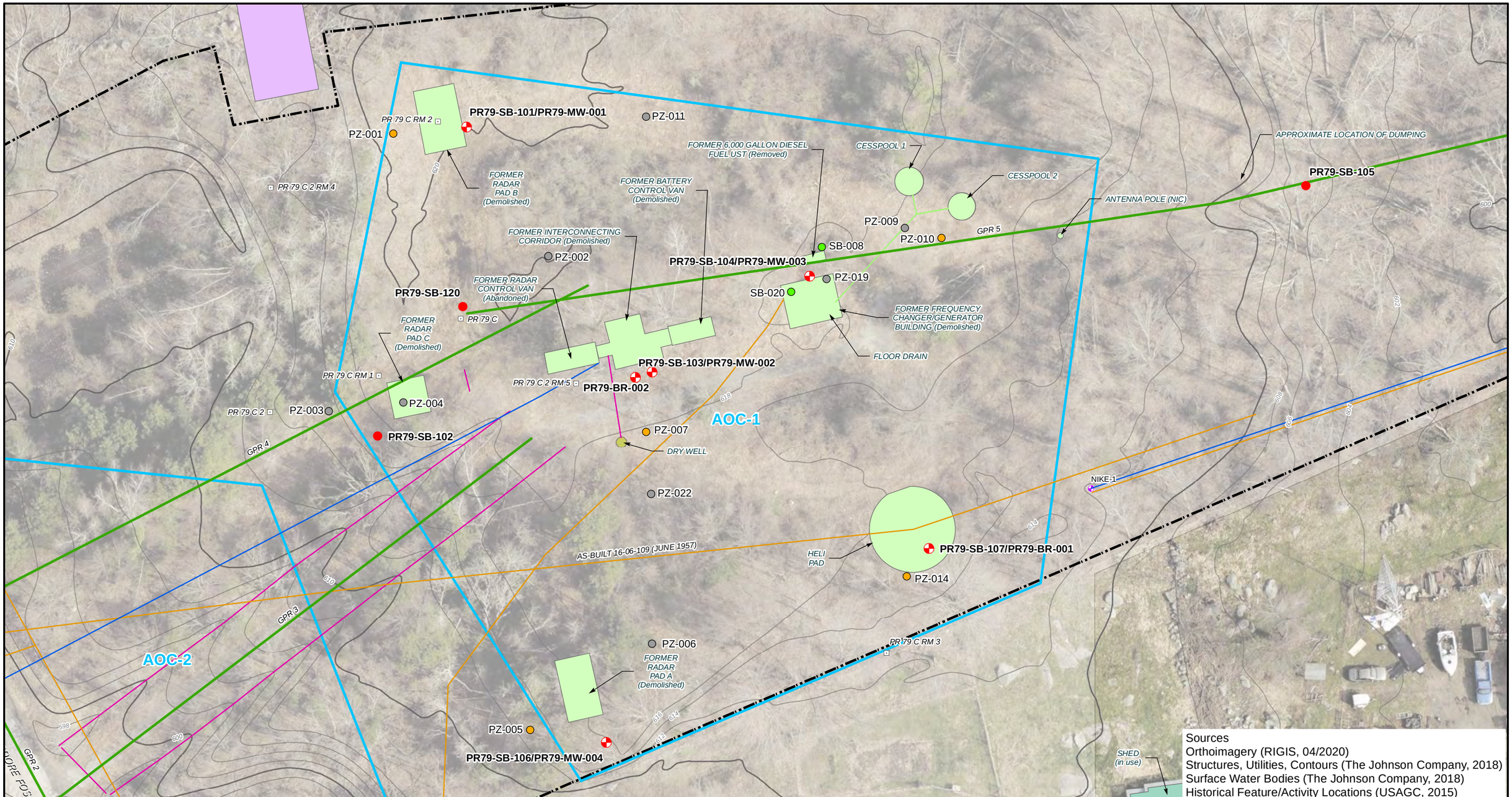

Sources
Orthoimagery (RIGIS, 04/2020)
Structures, Utilities, Contours (The Johnson Company, 2018)
Surface Water Bodies (The Johnson Company, 2018)
Historical Feature/Activity Locations (USAGC, 2015)

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Legend

- Monitoring Well
- Soil Boring
- Historic Soil Boring/Piezometer (AMEC, 2013)
- Abandoned Historic Soil Boring/ Piezometer (AMEC, 2013)
- Historic Soil Boring (AMEC, 2013)
- Drinking Water - Individual
- Drinking Water - Not in Use
- Geodetic Control Station (National Geodetic Survey)
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Cemetery
- Index Contour
- Intermediate Contour
- Electrical Line
- Sewer Line
- Water Line
- Drainage
- Seismic Lines (Hager Geosciences, Inc (HGI), 2017)

0 20 40
Scale in Feet

N

FIGURE 3
AOC-1 SAMPLING LOCATIONS

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

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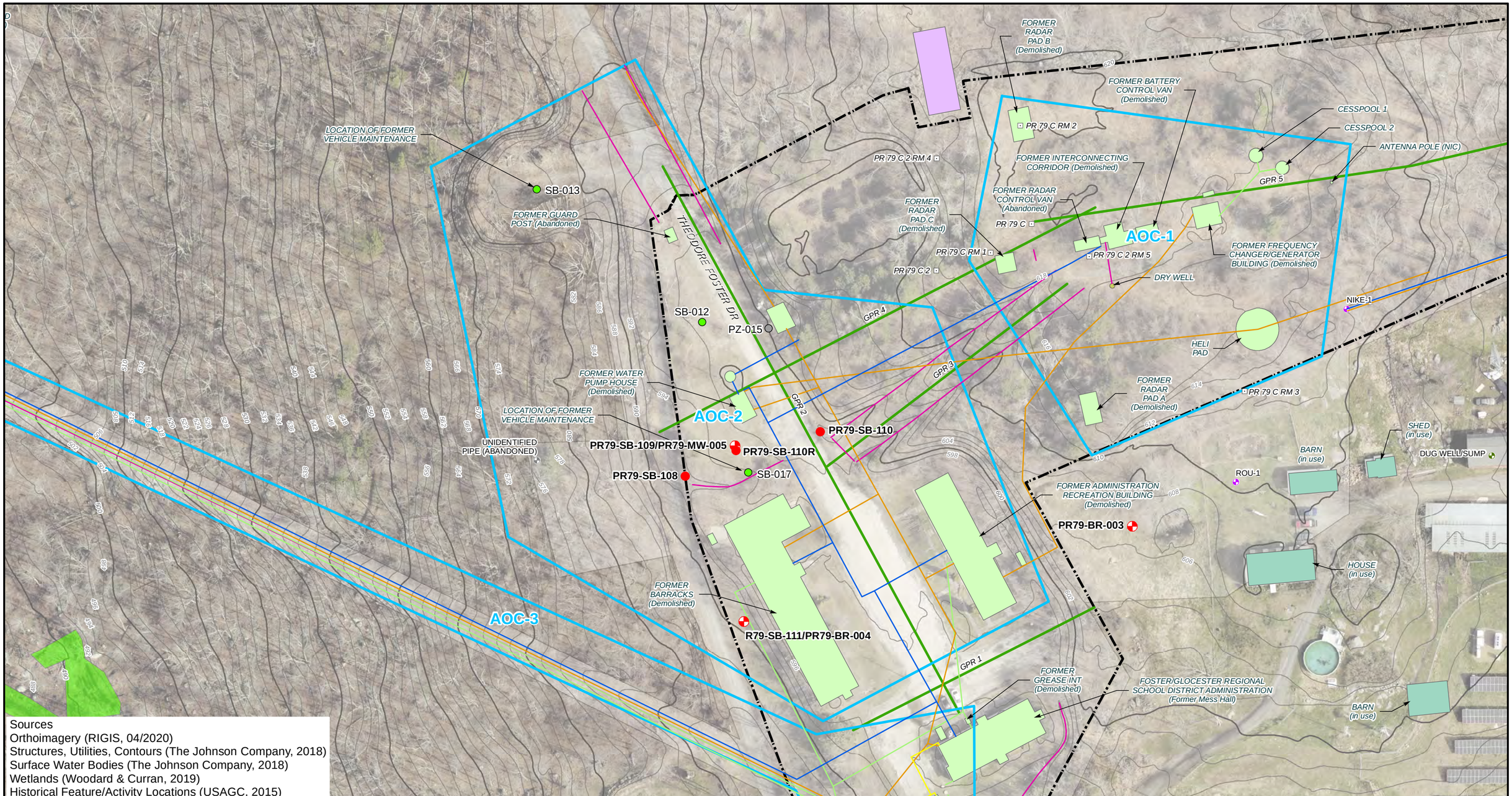

Sources
Orthoimagery (RIGIS, 04/2020)
Structures, Utilities, Contours (The Johnson Company, 2018)
Surface Water Bodies (The Johnson Company, 2018)
Wetlands (Woodard & Curran, 2019)
Historical Feature/Activity Locations (USAGC, 2015)

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Legend

- Monitoring Well
- Soil Boring
- Abandoned Historic Soil Boring/ Piezometer (AMEC, 2013)
- Historic Soil Boring (AMEC, 2013)
- Drinking Water - Individual
- Drinking Water - Not in Use
- Unidentified Pipe
- Geodetic Control Station (National Geodetic Survey)
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Wetland (Woodard & Curran, 2019)
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Index Contour
- Intermediate Contour
- Electrical Line
- Liquefied Petroleum Gas Line
- Sewer Line
- Water Line
- Drainage
- Seismic Lines (Hager Geosciences, Inc (HGI), 2017)
- Cemetery

N

0 40 80
Scale in Feet

FIGURE 4
AOC-2 SAMPLING LOCATIONS

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

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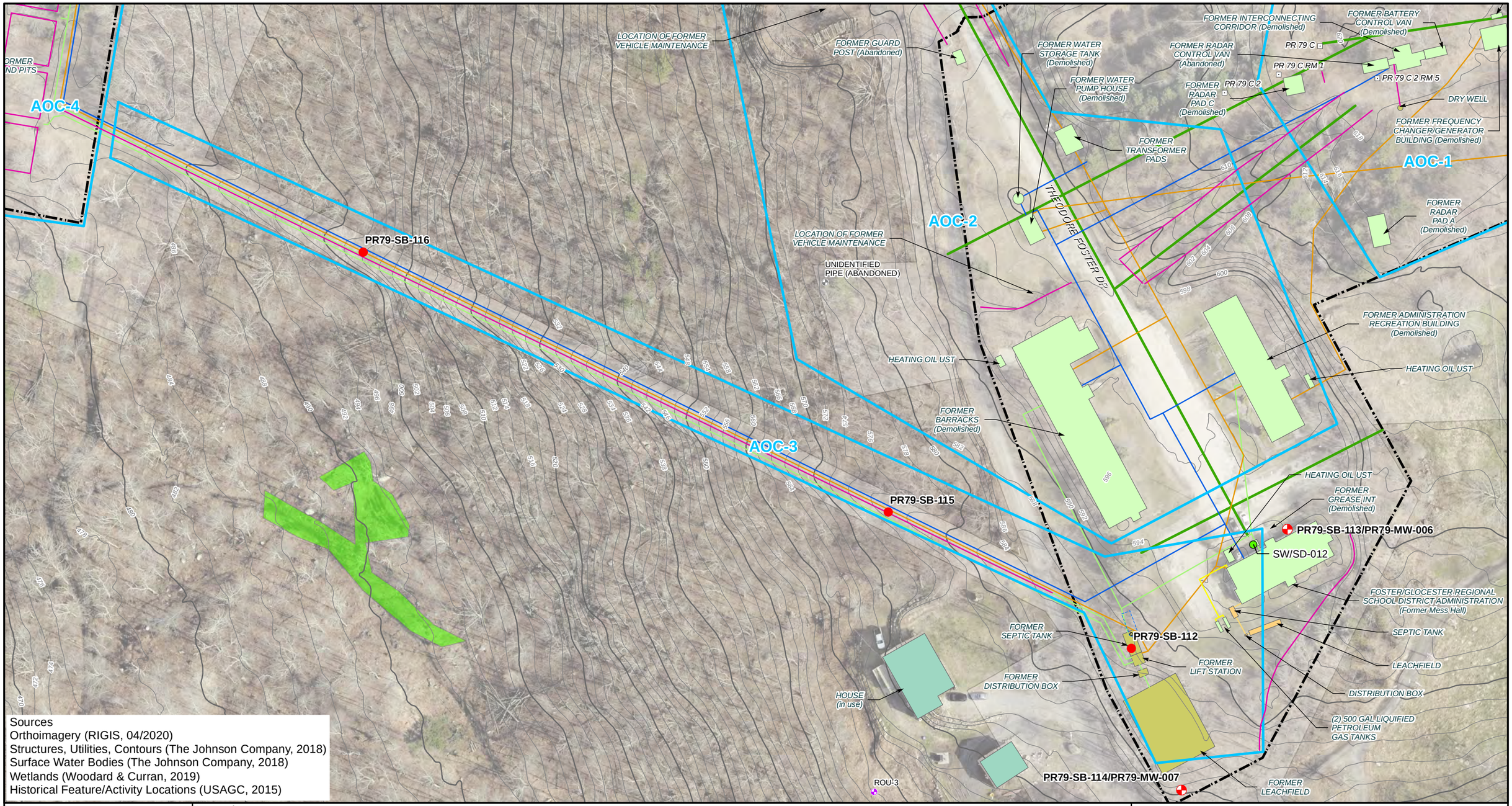

Sources
Orthoimagery (RIGIS, 04/2020)
Structures, Utilities, Contours (The Johnson Company, 2018)
Surface Water Bodies (The Johnson Company, 2018)
Wetlands (Woodard & Curran, 2019)
Historical Feature/Activity Locations (USAGC, 2015)

AECOM

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Project #:	60608703	

Legend

- Monitoring Well
- Soil Boring
- Historic Soil Boring (AMEC, 2013)
- Drinking Water - Individual
- Unidentified Pipe
- Geodetic Control Station (National Geodetic Survey)
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Wetland (Woodard & Curran, 2019)
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Former Sewer and Stormwater Structures
- Existing Sewer Structures
- Existing Sewer Line
- Index Contour
- Intermediate Contour
- Electrical Line
- Liquefied Petroleum Gas Line
- Sewer Line
- Water Line
- Drainage
- Seismic Lines (Hager Geosciences, Inc (HGI), 2017)

N

0 40 80
Scale in Feet

FIGURE 5
AOC-3 SAMPLING LOCATIONS

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

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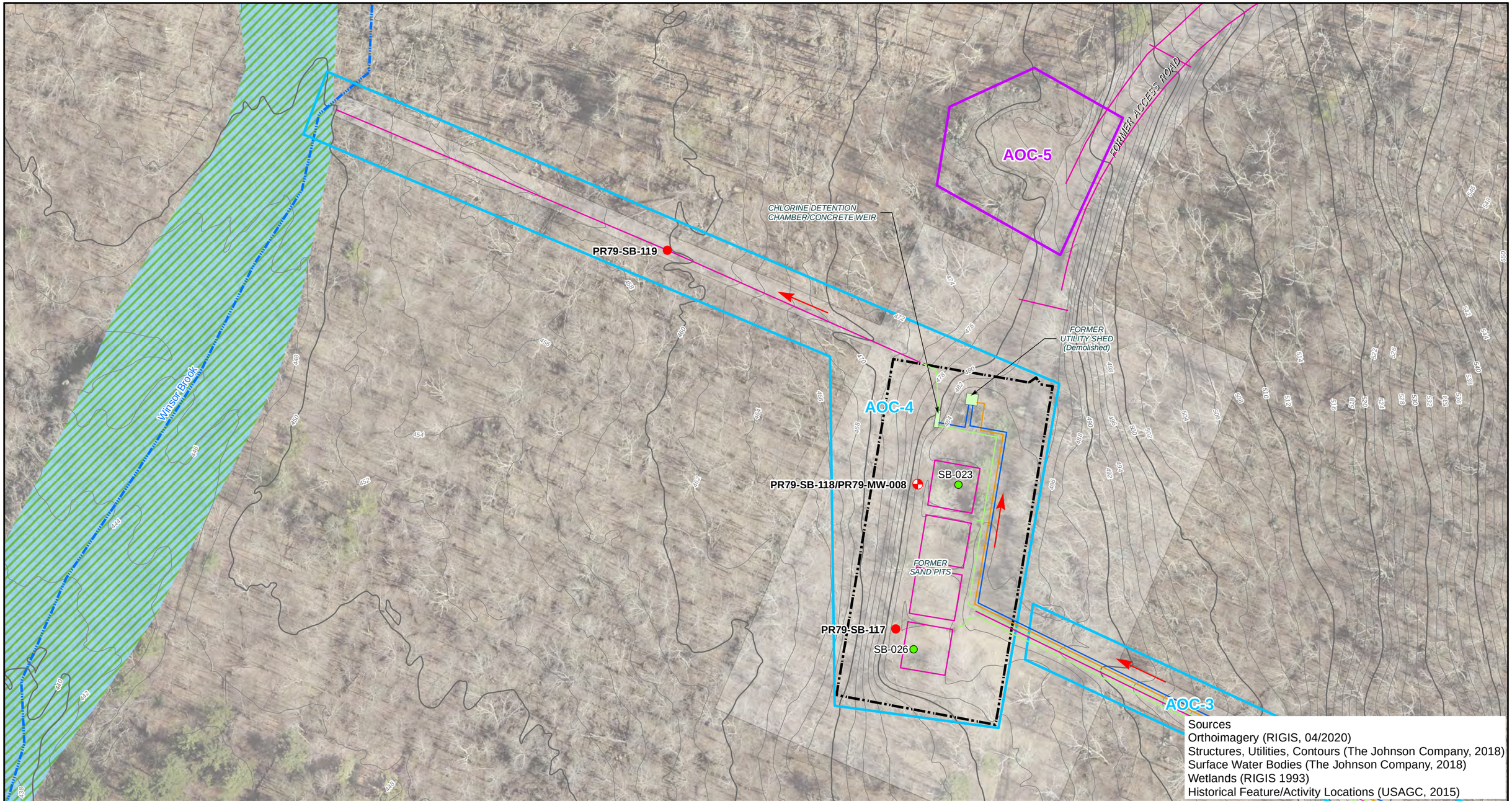

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Project #:	60608703	

Legend

- Monitoring Well
- Soil Boring
- Historic Soil Boring (AMEC, 2013)
- Stream
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Area of Concern (AOC) (Non-Government)
- Wetlands (RIGIS 1993)
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Index Contour
- Intermediate Contour
- Electrical Line
- Sewer Line
- Water Line
- Drainage
- Flow Direction

N

0 40 80

Scale in Feet

FIGURE 6
AOC-4 SAMPLING LOCATIONS

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

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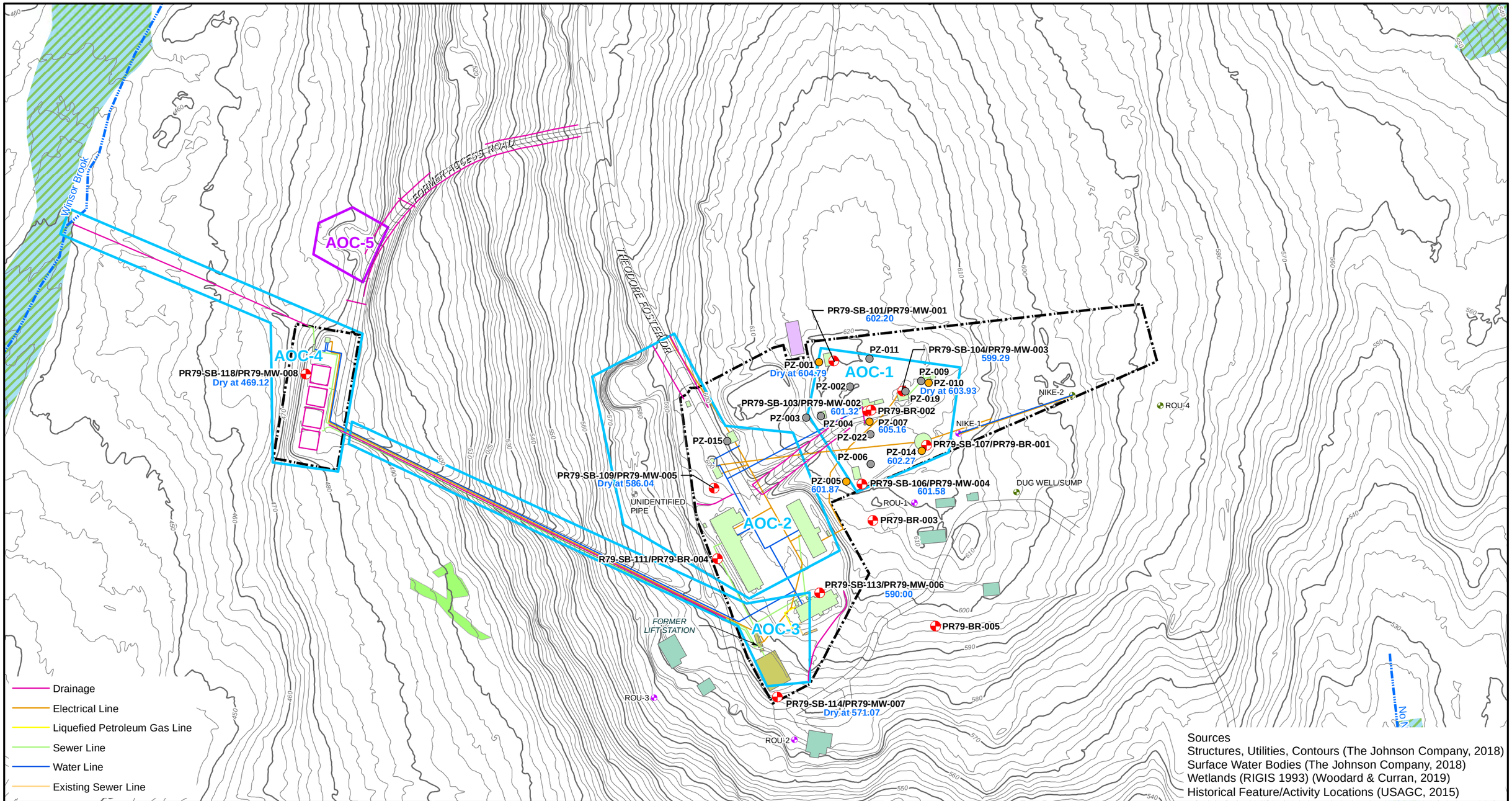

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Project #:	60608703	

Legend

602.20 Groundwater Elevation (NAVD 88) (11/17/2020)

- Monitoring Well
- Historic Soil Boring/Piezometer (AMEC, 2013)
- Abandoned Historic Soil Boring/Piezometer (AMEC, 2013)
- Drinking Water - Individual
- Drinking Water - Not in Use
- Unidentified Pipe
- Stream
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Area of Concern (AOC) (Non-Government)
- Wetland (Woodard & Curran, 2019)
- Wetlands (RIGIS 1993)
- Cemetery
- Former Sewer and Stormwater Structures
- Existing Sewer Structures
- Index Contour
- Intermediate Contour

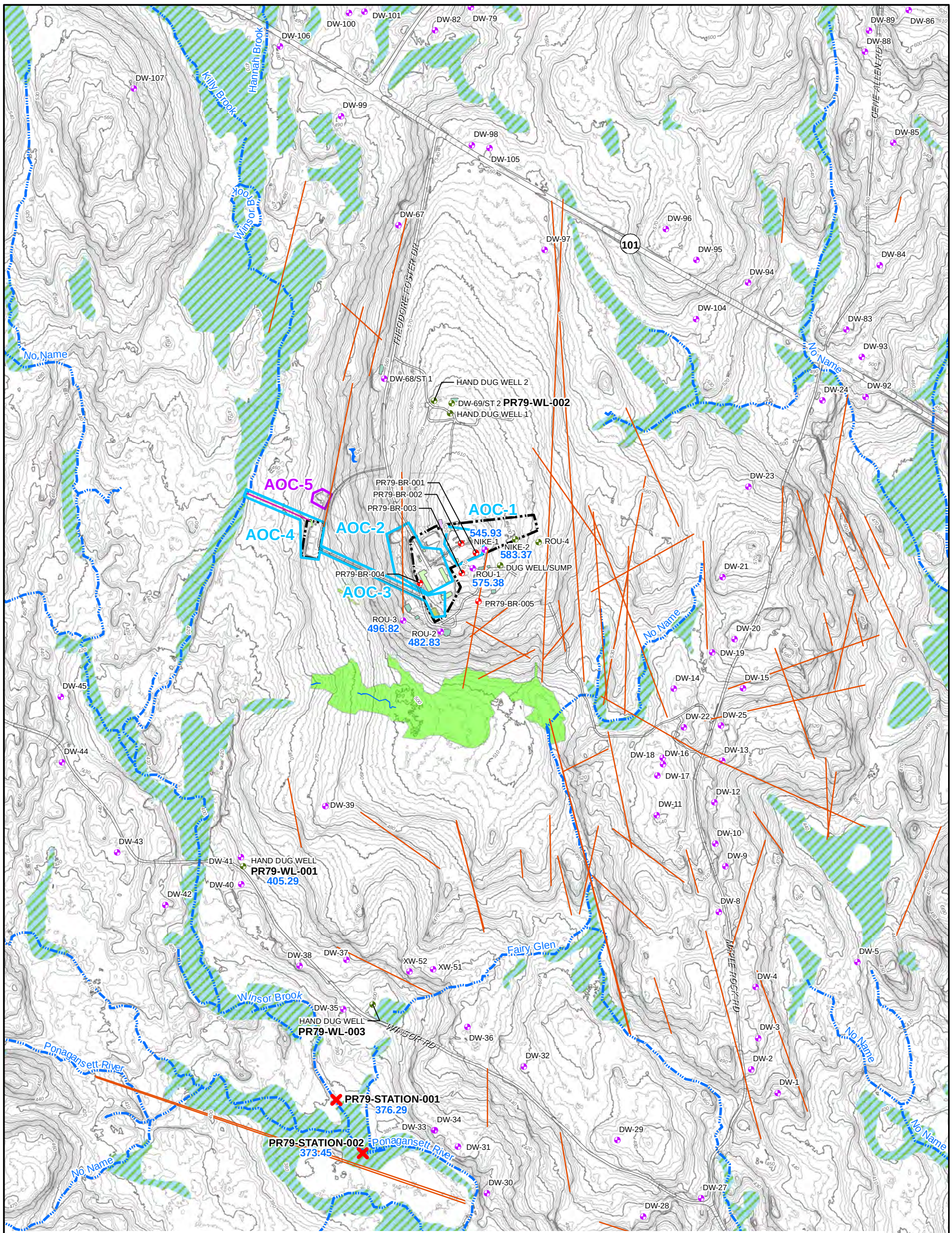
0 100 200
Scale in Feet

N

FIGURE 7
OVERBURDEN GROUNDWATER ELEVATION MAP

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

Path: L:\Legacy\USCHL1FP001\Data\Projects\Govt\Projects\USACE New England HTRW 2019\Task Orders\TO 0001 NIKE PR79 RIFS\900_GIS\Projects\Field_Report\MXD\Fig_7_Overburden_Groundwater_Elevation_Map.mxd



Legend

- 482.83 Groundwater Elevation (NAVD 88)
- Gauging Station
- Bedrock Monitoring Well
- Drinking Water - Individual
- Drinking Water - Not in Use
- Stream
- Perimeter Fence
- Bedrock Lineament
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Area of Concern (AOC) (Non-Government)
- Wetland (Woodard & Curran, 2019)
- Wetlands (RIGIS 1993)
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Index Contour
- Intermediate Contour
- Sewer Line
- Drainage

0 375 750
Scale in Feet

AECOM

Drawn:	JB	10/26/2021
Approved:	GH	10/26/2021
Project #:	60608703	

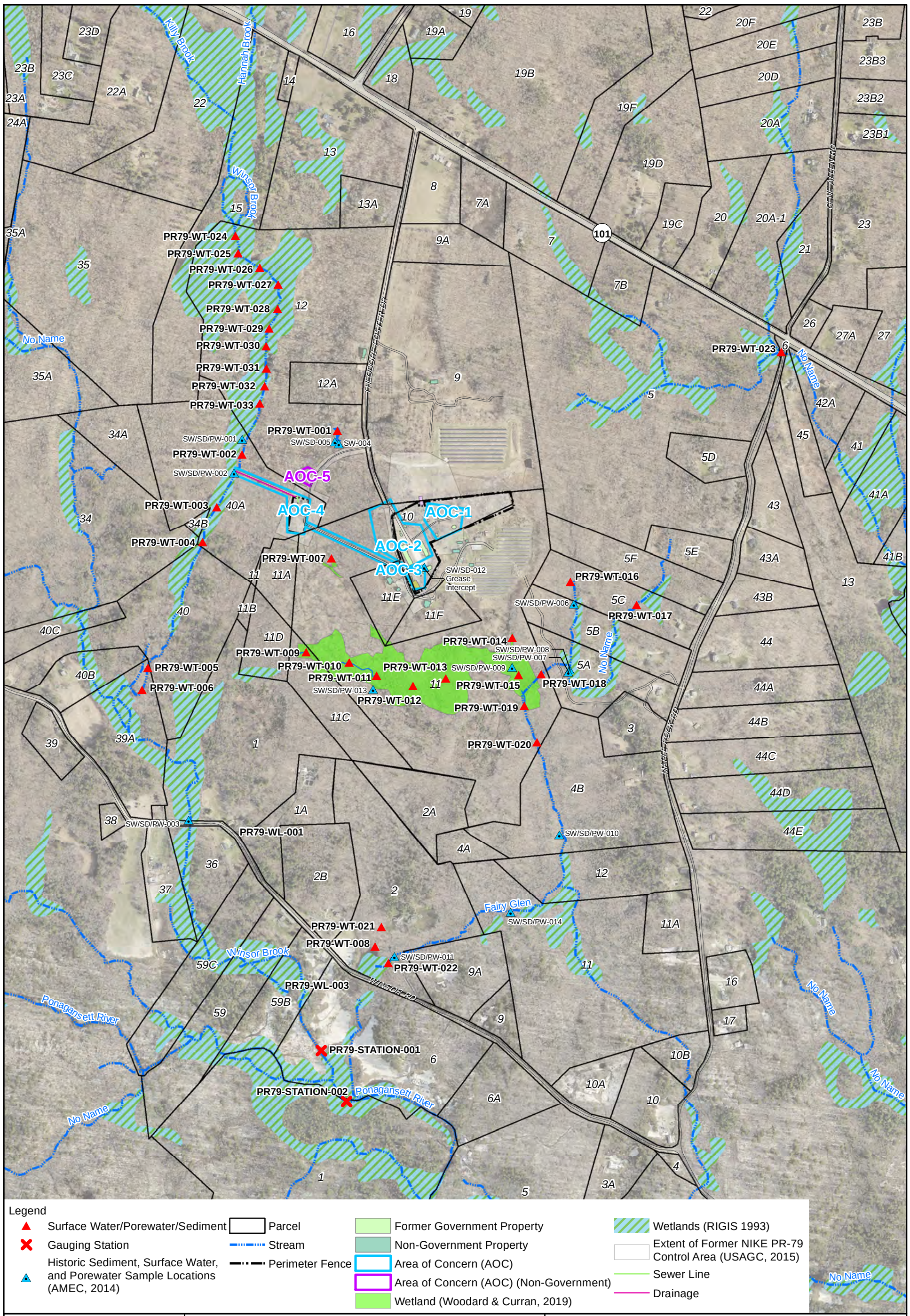
Sources
Structures, Utilities, Contours (The Johnson Company, 2018)
Surface Water Bodies (The Johnson Company, 2018)
Wetlands (RIGIS 1993) (Woodard & Curran, 2019)
Historical Feature/Activity Locations (USAGC, 2015)
Bedrock Lineaments (The Johnson Company, 2018)
Note
Map shows groundwater elevations measured at wells NIKE-1 and NIKE-2 on 11/30/2020, ROU-1, ROU-2, and ROU-3 on 12/1/2020, and PR79-WL-001 on 12/4/2020. The map also shows stream gauging station elevations measured at PR79-STATION-001 and PR79-STATION-002 on 11/17/2020.

N

FIGURE 8
REGIONAL GROUNDWATER ELEVATION MAP

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

Path: L:\Legacy\USCHL1FP001\Data\Projects\Govt\Projects\USACE New England HTRW 2019\Task Orders\TO 0001 NIKE PR79 RIFS\900_GIS\Projects\Field_Report\MXD\Fig_8_Regional_Groundwater_Elevation_Map.mxd



Legend

- Surface Water/Porewater/Sediment
- Gauging Station
- Historic Sediment, Surface Water, and Porewater Sample Locations (AMEC, 2014)
- Parcel
- Stream
- Perimeter Fence
- Former Government Property
- Non-Government Property
- Area of Concern (AOC)
- Area of Concern (AOC) (Non-Government)
- Wetland (Woodard & Curran, 2019)
- Wetlands (RIGIS 1993)
- Extent of Former NIKE PR-79 Control Area (USAGC, 2015)
- Sewer Line
- Drainage

AECOM

Drawn:	JB	06/08/2021
Approved:	GH	06/08/2021
Project #:	60608703	

Sources
Orthoimagery (RIGIS, 04/2020)
Structures, Utilities, Contours (The Johnson Company, 2018)
Surface Water Bodies (The Johnson Company, 2018)
Wetlands (RIGIS 1993) (Woodard & Curran, 2019)
Historical Feature/Activity Locations (USAGC, 2015)
Bedrock Lineaments (The Johnson Company, 2018)

0 375 750
Scale in Feet

N

FIGURE 9
SURFACE WATER, PORE WATER, AND SEDIMENT SAMPLING LOCATIONS

FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

Path: L:\Legacy\USCHL1FP001\Data\Projects\Govt\Projects\USACE New England HTRW 2019\Task Orders\TO 0001 NIKE PR79 RIFS\900_GIS\Projects\Field_Report\MXD\Fig_9_Surface_Water_Porewater_Sediment_Sampling_Loc.mxd

Appendix A

Tables

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-121				PR79-SB-122		PR79-SB-123		PR79-SB-124
			Sample ID	PR79-SB-121-AS-01	PR79-SB-121-BS-01	PR79-SB-FD06-01 (FD)	PR79-SOBG-FD05-01 (FD)	PR79-SB-122-AS-01	PR79-SB-122-BS-01	PR79-SB-123-AS-01	PR79-SB-123-BS-01	PR79-SB-124-AS-01
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.0310 J**	0.0170 U	0.0160 U	**0.0260 J**	**0.0300 J**	0.0140 UJ	0.0180 UJ	0.0160 UJ	**0.0580**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**14200**	**10000**	**10200**	**13200**	**17900**	**15900**	**8640**	**11900**	**17500**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	**0.0220 J**	0.0270 U	0.0260 U	0.0360 U	**0.0510 J**	0.0490 U	0.0530 U	0.0360 U	0.0420 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.69**	**0.760**	**0.450**	**1.35**	**1.99**	**0.790**	**1.30**	**0.560**	**1.78**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**38.1**	**216**	**246**	**33.2**	**36.6**	**156**	**53.5**	**160**	**72.3**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.472**	**0.680**	**0.884**	**0.515**	**0.573**	**0.506**	**0.353**	**0.221**	**0.595**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0400 J**	**0.0240 J**	**0.0200 J**	**0.0400 J**	0.0850 U	0.0990 U	0.0210 U	0.0720 U	**0.0280 J**
Calcium	Solid			**738**	**2940**	**2010**	**515**	**526**	**2180**	**1030**	**1880**	**782**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**13.9**	**15.5**	**16.6**	**12.0**	**14.9**	**35.0**	**12.0**	**57.9**	**24.9**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**4.37**	**8.09**	**8.15**	**3.44**	**4.95**	**9.74**	**3.28**	**9.34**	**4.65**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**6.62**	**1.27 J**	0.530 U	**5.06**	**4.46**	**10.8**	**8.61**	**6.34**	**9.42**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**12800**	**12400**	**12000**	**11500**	**15000**	**19400**	**8920**	**15400**	**19300**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**4.49**	**4.39**	**2.88**	**4.92**	**6.15**	**2.65**	**3.19**	**2.09**	**6.20**
Magnesium	Solid			**2510**	**6920**	**7120**	**1940**	**3040**	**9630**	**2160**	**8520**	**3470**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**162**	**218**	**220**	**188**	**300**	**392**	**98.8**	**197**	**138**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**7.95**	**13.7**	**13.7**	**6.90**	**7.56**	**20.7**	**6.76**	**22.2**	**10.3**
Potassium	Solid			**1030**	**6040**	**6810**	**696**	**928**	**8420**	**1020**	**6620**	**1230**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.320 J**	0.160 U	0.160 U	**0.403**	**0.666**	0.300 U	0.320 U	0.220 U	**0.395 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**0.765 J**	**0.498 J**	**0.474 J**	**0.583 J**	**0.540 J**	**0.387 J**	**0.344 J**	**0.370 J**	**0.763 J**
Sodium	Solid			93.0 U	**112**	**114**	73.0 U	85.0 U	**125**	100 U	**229**	83.0 U
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.117**	**0.158**	**0.176**	**0.0992**	**0.142**	**0.522**	0.100 UJ	**0.273**	**0.176**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**25.2**	**28.1**	**22.5**	**21.9**	**31.2**	**49.2**	**23.0**	**42.5**	**50.3**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**18.7**	**31.1**	**31.1**	**16.5**	**31.3**	**42.7**	**13.2**	**27.4**	**23.2**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0610 UJ	**0.00130 J**	**0.00150 J**	0.0550 UJ	**0.00160 J**	0.0520 U	**0.00180 J**	**0.00130 J**	0.0590 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-121				PR79-SB-122		PR79-SB-123		PR79-SB-124
			Sample ID	PR79-SB-121-AS-01	PR79-SB-121-BS-01	PR79-SB-FD06-01 (FD)	PR79-SOBG-FD05-01 (FD)	PR79-SB-122-AS-01	PR79-SB-122-BS-01	PR79-SB-123-AS-01	PR79-SB-123-BS-01	PR79-SB-124-AS-01
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 UJ	0.0100 UJ	0.0110 UJ	0.0100 UJ	0.0120 U
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	**0.00220 J**
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 UJ	0.0100 UJ	0.0110 U	0.0100 U	0.0120 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0610 U	0.0500 U	0.0460 U	0.0550 U	0.0660 U	0.0520 U	0.0560 U	0.0520 U	0.0590 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0120 U	0.0100 U	0.00920 U	0.0110 U	0.0130 UJ	0.0100 UJ	0.0110 UJ	0.0100 UJ	0.0120 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,1-Dichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.14		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,1-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,2-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.16		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
1,3-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.08		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
2-Butanone (MEK)	Solid	USEPA Region 4 soil screening levels - lowest value	1		0.0100 U	0.0100 U			0.0110 U		0.0100 U	
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300		0.0100 U	0.0100 U			0.0110 U		0.0100 U	
Acetone	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.0100 U	**0.00540 J**			0.0110 U		0.0100 U	
Benzene	Solid	USEPA Region 4 soil screening levels - lowest value	.12		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Bromomethane	Solid	USEPA Region 4 soil screening levels - lowest value	.002		0.00400 U	0.00400 U			0.00430 U		0.00400 U	
Carbon disulfide	Solid	USEPA Region 4 soil screening levels - lowest value	.005		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400		0.00400 U	0.00400 U			0.00430 U		0.00400 U	

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-121				PR79-SB-122		PR79-SB-123		PR79-SB-124
			Sample ID	PR79-SB-121-AS-01	PR79-SB-121-BS-01	PR79-SB-FD06-01 (FD)	PR79-SOBG-FD05-01 (FD)	PR79-SB-122-AS-01	PR79-SB-122-BS-01	PR79-SB-123-AS-01	PR79-SB-123-BS-01	PR79-SB-124-AS-01
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20
Chloroform	Solid	USEPA Region 4 soil screening levels - lowest value	.05		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11		0.00400 U	0.00400 U			0.00430 U		0.00400 UJ	
cis-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Ethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
m,p-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1		0.00400 U	0.00400 U			0.00430 U		0.00400 U	
Methylene chloride	Solid	USEPA Region 4 soil screening levels - lowest value	.21		0.0100 U	**0.00650 J**			0.0110 U		0.0100 U	
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
o-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 soil screening levels - lowest value	.18		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
tert-Butyl alcohol	Solid				0.0100 U	0.0100 U			0.0110 U		0.0100 U	
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Toluene	Solid	USEPA Region 4 soil screening levels - lowest value	.15		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
trans-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Trichloroethene (TCE)	Solid	USEPA Region 4 soil screening levels - lowest value	.06		0.00200 U	0.00200 U			0.00220 U		0.00200 U	
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02		0.00400 U	0.00400 U			0.00430 U		0.00400 U	

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-124	PR79-SB-125		PR79-SB-126		PR79-SB-127		PR79-SB-128	
			Sample ID	PR79-SB-124-BS-01	PR79-SB-125-AS-01	PR79-SB-125-BS-01	PR79-SB-126-AS-01	PR79-SB-126-BS-01	PR79-SB-127-AS-01	PR79-SB-127-BS-01	PR79-SB-128-AS-01	PR79-SB-128-BS-01
			Sampling Date	29-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	0.0160 U	**0.0672 J**	**0.0330 J**	**0.0300 J**	0.0170 U	**0.0370 J**	0.0160 UJ	**0.0330 J**	0.0160 U
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**19200**	**15200**	**9460**	**11300**	**27700**	**14100**	**8110**	**12000**	**6380**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0460 U	**0.0310 J**	0.0590 U	0.0440 U	0.0420 U	**0.0240 J**	0.0460 U	0.0560 U	0.0520 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**0.510**	**2.19**	**1.70**	**1.10**	**0.470**	**1.83**	**1.20**	**1.77**	**0.550**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**290**	**28.6**	**29.9**	**45.6**	**393**	**64.5**	**43.5**	**27.1**	**55.5**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.307**	**0.465**	**0.304**	**0.323**	**0.361**	**0.397**	**0.313**	**0.376**	**0.218**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0200 J**	0.120 U	0.120 U	**0.0380 J**	**0.0380 J**	**0.127**	0.0910 U	**0.0840 J**	**0.0190 J**
Calcium	Solid			**3680**	**588**	**852**	**1490**	**3160**	**1320**	**1340**	**600**	**1650**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**51.7**	**15.0**	**12.5**	**12.7**	**110**	**16.3**	**9.77**	**9.47**	**6.03**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**15.7**	**4.57**	**3.63**	**5.72**	**17.9**	**6.97**	**5.00**	**2.57**	**2.65**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**43.1**	**5.21**	**7.96**	**11.7**	**34.6**	**8.18**	**10.4**	**4.30**	**7.74**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**22500**	**13600**	**9120**	**11600**	**38700**	**15400**	**9070**	**9700**	**7670**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**1.95**	**4.57**	**3.46**	**5.10**	**1.92**	**3.99**	**2.45**	**7.34**	**1.70**
Magnesium	Solid			**12200**	**2790**	**2610**	**3420**	**22600**	**4960**	**2460**	**1510**	**1930**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**233**	**171**	**108**	**165**	**539**	**163**	**124**	**90.4**	**148**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**36.8**	**7.80**	**8.28**	**7.87**	**21.0**	**13.1**	**6.71**	**4.41**	**3.67**
Potassium	Solid			**8870**	**876**	**1330**	**1820**	**14700**	**2440**	**1660**	**574**	**2390**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.0360 J**	**0.240 J**	**0.0680 J**	**0.270 J**	**0.0490 J**	**0.180 J**	**0.0390 J**	**0.350 J**	0.310 U
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**1.02**	**0.520 J**	**0.526 J**	**0.656 J**	**1.56 J**	**0.400 J**	**0.394 J**	**0.460 J**	**0.494 J**
Sodium	Solid			**308**	58.0 U	120 U	**97.2**	**247**	**91.7**	91.0 U	56.0 U	**104**
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.297**	0.120 UJ	0.120 UJ	**0.0836 J**	**0.416**	**0.164**	**0.109**	**0.100 J**	**0.104**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**56.2**	**30.8**	**19.9**	**25.4**	**94.5**	**37.4**	**18.5**	**21.0**	**13.4**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**31.4**	**26.0**	**19.2**	**19.8**	**63.5**	**23.6**	**15.4**	**20.7**	**14.1**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0520 UJ	0.0600 U	0.0530 U	**0.00150 J**	0.0510 UJ	0.0580 U	0.0540 U	0.0560 UJ	0.0500 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0100 U	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.0100 U	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0100 U	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.0100 U	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0120 U	0.0100 U	**0.00240 J**	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-124	PR79-SB-125		PR79-SB-126		PR79-SB-127		PR79-SB-128	
			Sample ID	PR79-SB-124-BS-01	PR79-SB-125-AS-01	PR79-SB-125-BS-01	PR79-SB-126-AS-01	PR79-SB-126-BS-01	PR79-SB-127-AS-01	PR79-SB-127-BS-01	PR79-SB-128-AS-01	PR79-SB-128-BS-01
			Sampling Date	29-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0100 UJ	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0120 U	0.0100 U	**0.00530 J**	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0100 U	0.0120 U	0.0100 U	**0.00230 J**	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 UJ	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	**0.00180 J**	0.0120 U	0.0100 U	**0.00360 J**	**0.00240 J**	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0100 U	0.0120 UJ	0.0100 UJ	0.0110 U	0.0100 U	0.0120 UJ	0.0110 UJ	0.0110 U	0.00990 U
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0100 U	0.0120 U	0.0100 U	**0.00620 J**	**0.00190 J**	0.0120 U	0.0110 U	**0.00250 J**	0.00990 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0100 U	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0120 U	0.0100 U	**0.00220 J**	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0100 U	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0520 U	0.0600 U	0.0530 U	0.0540 U	0.0510 U	0.0580 U	0.0540 U	0.0560 U	0.0500 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.0100 U	0.0120 U	0.0100 U	**0.00250 J**	**0.00220 J**	0.0120 U	0.0110 U	0.0110 U	0.00990 U
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0100 U	0.0120 UJ	0.0100 UJ	**0.00360 J**	0.0100 U	0.0120 UJ	0.0110 UJ	0.0110 U	0.00990 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,1-Dichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.14	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,1-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,2-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.16	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
1,3-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.08	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
2-Butanone (MEK)	Solid	USEPA Region 4 soil screening levels - lowest value	1	0.0100 U		0.0120 U		0.0110 U		0.0100 U		0.00940 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.0100 U		0.0120 U		0.0110 U		0.0100 U		0.00940 U
Acetone	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.0100 U		**0.00540 J**		0.0110 U		0.0100 U		0.00940 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-124	PR79-SB-125		PR79-SB-126		PR79-SB-127		PR79-SB-128	
			Sample ID	PR79-SB-124-BS-01	PR79-SB-125-AS-01	PR79-SB-125-BS-01	PR79-SB-126-AS-01	PR79-SB-126-BS-01	PR79-SB-127-AS-01	PR79-SB-127-BS-01	PR79-SB-128-AS-01	PR79-SB-128-BS-01
			Sampling Date	29-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20
Benzene	Solid	USEPA Region 4 soil screening levels - lowest value	.12	0.00200 U		**0.00110 J**		0.00230 U		0.00200 U		0.00190 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Bromomethane	Solid	USEPA Region 4 soil screening levels - lowest value	.002	0.00410 U		0.00480 U		0.00460 U		0.00410 U		0.00380 U
Carbon disulfide	Solid	USEPA Region 4 soil screening levels - lowest value	.005	0.00200 U		0.00240 U		0.00230 U		0.00200 U		**0.000600 J**
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00410 U		0.00480 U		0.00460 U		0.00410 U		0.00380 U
Chloroform	Solid	USEPA Region 4 soil screening levels - lowest value	.05	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00410 U		0.00480 U		0.00460 U		0.00410 U		0.00380 U
cis-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Ethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
m,p-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1	0.00410 U		0.00480 U		0.00460 U		0.00410 U		0.00380 U
Methylene chloride	Solid	USEPA Region 4 soil screening levels - lowest value	.21	0.0100 U		0.0120 U		0.0110 U		0.0100 U		**0.00680 J**
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
o-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 soil screening levels - lowest value	.18	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
tert-Butyl alcohol	Solid			0.0100 U		0.0120 U		0.0110 U		0.0100 U		0.00940 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Toluene	Solid	USEPA Region 4 soil screening levels - lowest value	.15	0.00200 U		**0.0200**		0.00230 U		0.00200 U		0.00190 U
trans-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Trichloroethene (TCE)	Solid	USEPA Region 4 soil screening levels - lowest value	.06	0.00200 U		0.00240 U		0.00230 U		0.00200 U		0.00190 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00410 U		0.00480 U		0.00460 U		0.00410 U		0.00380 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-129		PR79-SB-130		PR79-SB-131		PR79-SB-132		PR79-SB-133
			Sample ID	PR79-SB-129-AS-01	PR79-SB-129-BS-01	PR79-SB-130-AS-01	PR79-SB-130-BS-01	PR79-SB-131-AS-01	PR79-SB-131-BS-01	PR79-SB-132-AS-01	PR79-SB-132-BS-01	PR79-SB-133-AS-01
			Sampling Date	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.0210 J**	0.0150 UJ	**0.0350 J**	0.0180 U	**0.0250 J**	0.0160 UJ	**0.0150 J**	**0.0160 J**	**0.0160 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**13400 J**	**12200 J**	**14800**	**9000**	**15700**	**3830**	**17400**	**7580**	**9790**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0560 UJ	0.0390 UJ	0.0620 U	0.0540 U	**0.0240 J**	0.0460 U	**0.0420 J**	0.0380 U	**0.0220 J**
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.60**	**0.560**	**1.60**	**1.00**	**1.60**	**0.540**	**2.43**	**1.00**	**1.56**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**128 J**	**256 J**	**32.0**	**48.9**	**31.1**	**25.8**	**34.1**	**38.4**	**27.3**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.495**	**0.230**	**0.472**	**0.388**	**0.503**	**0.133**	**0.573**	**0.253**	**0.383**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	0.110 U	0.0160 U	**0.0240 J**	**0.0130 J**	**0.0300 J**	**0.0140 J**	**0.124**	0.0750 U	0.0890 U
Calcium	Solid			**954 J**	**4780 J**	**402**	**842**	**555**	**1890**	**997**	**959**	**467**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**24.5 J**	**8.55**	**10.8**	**18.7**	**14.4**	**3.49**	**18.7**	**9.87**	**8.80**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**6.64 J**	**7.27**	**2.86**	**5.93**	**4.47**	**1.56**	**5.02**	**4.54**	**3.70**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**6.51**	**12.7**	**3.50**	**9.80**	**4.08**	**3.64**	**6.54**	**7.11**	**4.61**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**17800 J**	**17600 J**	**11600**	**8950**	**12800**	**5050**	**14700**	**8500**	**9930**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**4.13**	**1.91**	**4.96**	**2.16**	**5.57**	**1.32**	**7.21**	**2.51**	**4.38**
Magnesium	Solid			**4990 J**	**5590 J**	**1620**	**3260**	**2570**	**1200**	**3020**	**2390**	**1760**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**234 J**	**342 J**	**122**	**210**	**135**	**100**	**153**	**121**	**122**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**10.4 J**	**6.04**	**5.70**	**7.59**	**7.66**	**2.30**	**9.37**	**6.76**	**5.21**
Potassium	Solid			**3910 J**	**7470 J**	**584**	**1900**	**1090**	**1240**	**1180**	**1510**	**698**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.180 J**	0.240 U	**0.390 J**	**0.0490 J**	**0.230 J**	0.280 U	**0.440 J**	**0.0570 J**	**0.190 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**0.720 J**	**0.573 J**	**0.689 J**	**0.573 J**	**0.701 J**	**0.340 J**	**0.487 J**	**0.336 J**	**0.459 J**
Sodium	Solid			110 UJ	**88.5**	62.0 U	110 U	110 U	**112**	98.0 U	**84.8**	44.0 UJ
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.227**	**0.304**	**0.0800 J**	**0.105 J**	**0.116**	0.0370 UJ	**0.135**	**0.0878**	0.0890 UJ
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**40.4 J**	**25.1**	**22.0**	**17.2**	**25.6**	**8.99**	**32.8**	**16.9**	**17.2**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**30.3 J**	**37.3**	**16.6**	**15.1**	**24.3**	**8.83**	**25.3**	**13.9**	**16.8**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00210 J**	**0.00190 J**	0.0560 UJ	**0.00120 J**	0.0640 UJ	0.0540 UJ	**0.00170 J**	**0.00130 J**	**0.00180 J**
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-129		PR79-SB-130		PR79-SB-131		PR79-SB-132		PR79-SB-133
			Sample ID	PR79-SB-129-AS-01	PR79-SB-129-BS-01	PR79-SB-130-AS-01	PR79-SB-130-BS-01	PR79-SB-131-AS-01	PR79-SB-131-BS-01	PR79-SB-132-AS-01	PR79-SB-132-BS-01	PR79-SB-133-AS-01
			Sampling Date	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.0120 U	0.0100 U	**0.00190 J**	**0.00230 J**	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0120 UJ	0.0100 UJ	0.0110 U	0.0100 U	0.0130 UJ	0.0110 U	0.0120 UJ	0.0110 UJ	0.0110 UJ
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00300 J**	0.0100 U	0.0110 U	**0.00240 J**	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0120 UJ	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0120 U	0.0100 U	0.0110 U	0.0100 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0600 U	0.0520 U	0.0560 U	0.0520 U	0.0640 U	0.0540 U	0.0610 U	0.0550 U	0.0570 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.0120 U	0.0100 U	0.0110 U	**0.00240 J**	0.0130 U	0.0110 U	0.0120 U	0.0110 U	0.0110 U
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00320 J**	0.0100 UJ	0.0110 U	**0.00310 J**	0.0130 U	0.0110 U	0.0120 UJ	0.0110 UJ	0.0110 UJ
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
1,1-Dichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.14		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
1,1-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
1,2-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.16		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
1,3-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.08		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
2-Butanone (MEK)	Solid	USEPA Region 4 soil screening levels - lowest value	1		0.0110 U		0.0100 U		0.0110 UJ		0.00880 U	
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300		0.0110 U		0.0100 U		0.0110 U		0.00880 U	
Acetone	Solid	USEPA Region 4 soil screening levels - lowest value	.04		**0.0120 J**		**0.00860 J**		0.0110 UJ		0.00880 U	

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-129		PR79-SB-130		PR79-SB-131		PR79-SB-132		PR79-SB-133
			Sample ID	PR79-SB-129-AS-01	PR79-SB-129-BS-01	PR79-SB-130-AS-01	PR79-SB-130-BS-01	PR79-SB-131-AS-01	PR79-SB-131-BS-01	PR79-SB-132-AS-01	PR79-SB-132-BS-01	PR79-SB-133-AS-01
			Sampling Date	28-Apr-20	28-Apr-20	29-Apr-20	29-Apr-20	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
Benzene	Solid	USEPA Region 4 soil screening levels - lowest value	.12		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
Bromomethane	Solid	USEPA Region 4 soil screening levels - lowest value	.002		0.00460 U		0.00420 U		0.00430 UJ		0.00350 U	
Carbon disulfide	Solid	USEPA Region 4 soil screening levels - lowest value	.005		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400		0.00460 U		0.00420 U		0.00430 UJ		0.00350 U	
Chloroform	Solid	USEPA Region 4 soil screening levels - lowest value	.05		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11		0.00460 U		0.00420 U		0.00430 UJ		0.00350 U	
cis-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
Ethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
m,p-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1		0.00460 U		0.00420 U		0.00430 U		0.00350 U	
Methylene chloride	Solid	USEPA Region 4 soil screening levels - lowest value	.21		0.0110 U		0.0100 U		0.0110 UJ		0.00880 U	
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
o-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 soil screening levels - lowest value	.18		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
tert-Butyl alcohol	Solid				0.0110 U		0.0100 U		0.0110 UJ		0.00880 U	
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780		0.00230 UJ		0.00210 U		0.00220 U		0.00180 U	
Toluene	Solid	USEPA Region 4 soil screening levels - lowest value	.15		**0.00450 J**		**0.00160 J**		0.00220 U		0.00180 U	
trans-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00230 U		0.00210 U		0.00220 UJ		0.00180 U	
Trichloroethene (TCE)	Solid	USEPA Region 4 soil screening levels - lowest value	.06		0.00230 U		0.00210 U		0.00220 U		0.00180 U	
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02		0.00460 U		0.00420 U		0.00430 UJ		0.00350 U	

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-133	PR79-SB-134		PR79-SB-135		PR79-SB-136			
			Sample ID	PR79-SB-133-BS-01	PR79-SB-134-AS-01	PR79-SB-134-BS-01	PR79-SB-135-AS-01	PR79-SB-135-BS-01	PR79-SB-136-AS-01	PR79-SB-136-BS-01	PR79-SB-FD07-01 (FD)	PR79-SB-FD08-01 (FD)
			Sampling Date	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	0.0140 UJ	**0.0120 J**	0.0160 UJ	**0.00570 J**	0.0180 UJ	**0.0150 J**	0.0140 UJ	**0.0140 J**	0.0160 UJ
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**6890**	**6860**	**7620**	**6230**	**4890**	**24100**	**5100**	**21200**	**5380**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0380 U	0.0500 U	0.0300 U	0.0450 U	0.0430 U	0.0600 U	0.0510 U	0.0490 U	0.0450 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**0.750**	**0.740**	**0.490**	**0.910**	**0.490**	**1.87**	**0.570**	**1.69**	**0.600**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**64.0**	**32.9**	**166**	**28.5**	**79.4**	**77.8**	**32.6**	**69.3**	**31.6**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.165**	**0.216**	**0.132**	**0.167**	**0.117**	**0.763**	**0.173**	**0.712**	**0.191**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	0.0760 U	**0.0280 J**	**0.0160 J**	**0.0210 J**	**0.0200 J**	**0.0260 J**	**0.0150 J**	**0.0290 J**	**0.0230 J**
Calcium	Solid			**990**	**1100**	**2160**	**1160**	**1650**	**797**	**1270**	**702**	**1440**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**7.55**	**6.66**	**7.50**	**7.26**	**4.14**	**19.9**	**5.55**	**18.2**	**6.29**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**4.94**	**3.44**	**4.70**	**2.93**	**2.24**	**6.91**	**2.46**	**5.08**	**2.22**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**7.04**	**5.73**	**7.12**	**3.32**	**5.73**	**9.68**	**5.88**	**8.85**	**5.44**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**11600**	**7820**	**12400**	**7630**	**7080**	**21500**	**5960**	**18100**	**6100**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**2.07**	**2.54**	**1.34**	**1.85**	**1.52**	**7.42**	**2.00**	**6.62**	**2.03**
Magnesium	Solid			**3060**	**2020**	**3650**	**1860**	**1560**	**3730**	**1470**	**2870**	**1420**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**190**	**114**	**228**	**127**	**130**	**199**	**103**	**171**	**106**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**4.77**	**4.59**	**5.15**	**4.56**	**2.70**	**11.5**	**3.66**	**10.4**	**3.90**
Potassium	Solid			**3630**	**1460**	**5020**	**1690**	**2100**	**1620**	**1330**	**1350**	**1280**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.0420 J**	**0.0710 J**	0.180 U	**0.0730 J**	0.260 U	**0.551 J**	0.300 U	**0.489 J**	**0.0400 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**0.484 J**	**0.445 J**	**0.584 J**	**0.428 J**	**0.486 J**	**1.08 J**	**0.348 J**	**0.754 J**	**0.400 J**
Sodium	Solid			**79.6**	100 U	**122**	90.0 U	**110**	120 U	100 U	99.0 U	**96.9**
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.157**	0.100 UJ	**0.158**	0.0900 UJ	0.0860 UJ	**0.193**	0.100 UJ	**0.201**	0.0890 UJ
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**18.5**	**14.3**	**24.0**	**13.5**	**12.7**	**42.7**	**11.0**	**35.6**	**11.5**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**24.3**	**12.7**	**29.2**	**15.6**	**13.7**	**35.8**	**10.3**	**31.8**	**10.8**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0450 U	0.0600 UJ	0.0530 UJ	0.0580 UJ	0.0540 UJ	**0.00200 J**	0.0540 UJ	0.0620 UJ	0.0550 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-133	PR79-SB-134		PR79-SB-135		PR79-SB-136			
			Sample ID	PR79-SB-133-BS-01	PR79-SB-134-AS-01	PR79-SB-134-BS-01	PR79-SB-135-AS-01	PR79-SB-135-BS-01	PR79-SB-136-AS-01	PR79-SB-136-BS-01	PR79-SB-FD07-01 (FD)	PR79-SB-FD08-01 (FD)
			Sampling Date	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00900 UJ	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 UJ	0.0110 UJ
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00900 U	0.0120 U	0.0110 U	0.0120 UJ	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0450 U	0.0600 U	0.0530 U	0.0580 U	0.0540 U	0.0650 U	0.0540 U	0.0620 U	0.0550 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.00900 U	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.00900 UJ	0.0120 U	0.0110 U	0.0120 U	0.0110 U	0.0130 U	0.0110 U	0.0120 U	0.0110 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,1-Dichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.14	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,1-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,2-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.16	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
1,3-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.08	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
2-Butanone (MEK)	Solid	USEPA Region 4 soil screening levels - lowest value	1	0.0120 U		0.0110 U		0.0100 U		0.00940 U		0.00980 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.0120 U		0.0110 U		0.0100 U		0.00940 U		0.00980 U
Acetone	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.0120 U		0.0220 U		0.0100 U		0.00940 U		0.00980 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-133	PR79-SB-134		PR79-SB-135		PR79-SB-136			
			Sample ID	PR79-SB-133-BS-01	PR79-SB-134-AS-01	PR79-SB-134-BS-01	PR79-SB-135-AS-01	PR79-SB-135-BS-01	PR79-SB-136-AS-01	PR79-SB-136-BS-01	PR79-SB-FD07-01 (FD)	PR79-SB-FD08-01 (FD)
			Sampling Date	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Benzene	Solid	USEPA Region 4 soil screening levels - lowest value	.12	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Bromomethane	Solid	USEPA Region 4 soil screening levels - lowest value	.002	0.00460 U		0.00450 U		0.00400 U		0.00380 U		0.00390 U
Carbon disulfide	Solid	USEPA Region 4 soil screening levels - lowest value	.005	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00460 U		0.00450 U		0.00400 U		0.00380 U		0.00390 U
Chloroform	Solid	USEPA Region 4 soil screening levels - lowest value	.05	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00460 U		0.00450 U		0.00400 U		0.00380 U		0.00390 U
cis-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Ethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
m,p-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1	0.00460 U		0.00450 U		0.00400 U		0.00380 U		0.00390 U
Methylene chloride	Solid	USEPA Region 4 soil screening levels - lowest value	.21	0.0120 U		0.0110 U		0.0100 U		0.00940 U		0.00980 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
o-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 soil screening levels - lowest value	.18	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
tert-Butyl alcohol	Solid			0.0120 U		0.0110 U		0.0100 U		0.00940 U		0.00980 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Toluene	Solid	USEPA Region 4 soil screening levels - lowest value	.15	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
trans-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Trichloroethene (TCE)	Solid	USEPA Region 4 soil screening levels - lowest value	.06	0.00230 U		0.00220 U		0.00200 U		0.00190 U		0.00200 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00460 U		0.00450 U		0.00400 U		0.00380 U		0.00390 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-137		PR79-SB-138		PR79-SB-139		PR79-SB-140	
			Sample ID	PR79-SB-137-AS-01	PR79-SB-137-BS-01	PR79-SB-138-AS-01	PR79-SB-138-BS-01	PR79-SB-139-AS-01	PR79-SB-139-BS-01	PR79-SB-140-AS-01	PR79-SB-140-BS-01
			Sampling Date	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**								
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.00790 J**	0.0170 UJ	**0.0160 J**	0.0190 UJ	**0.00940 J**	0.0160 UJ	**0.0270 J**	**0.00610 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**								
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**9390**	**4200**	**8330**	**6300**	**13700**	**9130**	**14200**	**10800**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0350 U	0.0340 U	**0.0260 J**	0.0400 U	0.0510 U	0.0440 U	0.0350 U	0.0310 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.30**	**0.460**	**1.88**	**0.730**	**1.94**	**0.860**	**1.87**	**1.71**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**39.2**	**33.5**	**33.2**	**53.3**	**43.5**	**60.0**	**46.4**	**42.0**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.227**	**0.127**	**0.320**	**0.267**	**0.440**	**0.307**	**0.416**	**0.305**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0420 J**	**0.0160 J**	0.0880 U	0.0810 U	**0.0250 J**	**0.0250 J**	**0.0290 J**	**0.0250 J**
Calcium	Solid			**835**	**1330**	**1050**	**1460**	**913**	**1750**	**666**	**966**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**12.4**	**4.33**	**7.59**	**9.73**	**16.3**	**45.7**	**15.7**	**13.4**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**3.88**	**1.92**	**3.31**	**5.83**	**5.01**	**5.29**	**4.65**	**4.76**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**5.43**	**5.14**	**9.88**	**8.39**	**8.65**	**8.09**	**7.49**	**9.60**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**11200**	**5270**	**8470**	**8720**	**13000**	**11000**	**12800**	**10400**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**4.20**	**1.41**	**7.06**	**1.97**	**4.93**	**3.09**	**4.81**	**3.50**
Magnesium	Solid			**3020**	**1250**	**1780**	**2730**	**3140**	**3620**	**3230**	**3290**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**195**	**101**	**128**	**138**	**157**	**181**	**142**	**145**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**7.83**	**2.80**	**4.47**	**5.83**	**9.32**	**25.6**	**9.07**	**9.39**
Potassium	Solid			**3150**	**1420**	**1290**	**2140**	**1620**	**3040**	**2060**	**1630**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.0770 J**	0.210 U	**0.170 J**	0.240 U	**0.200 J**	**0.0940 J**	**0.210 J**	**0.0630 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**0.449 J**	**0.329 J**	**0.442 J**	**0.403 J**	**0.790 J**	**0.654 J**	**0.583 J**	**0.526 J**
Sodium	Solid			**98.7**	**84.9**	88.0 UJ	**112**	100 U	**201**	70.0 U	**79.4**
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.158**	0.0690 UJ	**0.0902**	**0.102**	**0.119**	**0.153**	**0.140**	**0.0996**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**19.0**	**9.13**	**16.2**	**17.9**	**26.7**	**23.0**	**27.8**	**22.4**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**26.7**	**10.2**	**17.9**	**14.1**	**25.6**	**21.7**	**23.2**	**19.3**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**								
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0550 UJ	0.0540 UJ	0.0540 U	0.0510 U	0.0600 UJ	0.0560 UJ	**0.00160 J**	**0.00130 J**
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0110 U	0.0110 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.0110 U	0.0110 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0110 U	0.0110 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.0110 U	0.0110 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 U	**0.00360 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-137		PR79-SB-138		PR79-SB-139		PR79-SB-140	
			Sample ID	PR79-SB-137-AS-01	PR79-SB-137-BS-01	PR79-SB-138-AS-01	PR79-SB-138-BS-01	PR79-SB-139-AS-01	PR79-SB-139-BS-01	PR79-SB-140-AS-01	PR79-SB-140-BS-01
			Sampling Date	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 U	0.0110 U	**0.00440 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 U	**0.00640 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0110 U	0.0110 U	**0.00300 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 U	**0.00360 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.0110 U	0.0110 U	**0.00390 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 UJ	0.0110 UJ	0.0110 UJ	0.0100 UJ	0.0120 UJ	0.0110 UJ	0.0120 UJ	0.0120 UJ
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0110 U	0.0110 U	**0.00780 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0110 U	0.0110 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 U	**0.00240 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0110 U	0.0110 U	0.0110 U	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0550 U	0.0540 U	0.0540 U	0.0510 U	0.0600 U	0.0560 U	0.0620 U	0.0590 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.0110 U	0.0110 U	**0.00350 J**	0.0100 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00250 J**	0.0110 U	**0.00820 J**	0.0100 UJ	0.0120 U	0.0110 U	0.0120 U	0.0120 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**								
1,1,1-Trichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,1-Dichloroethane	Solid	USEPA Region 4 soil screening levels - lowest value	.14		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,1-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,2-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.09		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.16		0.00220 U		0.00240 U		0.00220 U		0.00200 U
1,3-Dichlorobenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.08		0.00220 U		0.00240 U		0.00220 U		0.00200 U
2-Butanone (MEK)	Solid	USEPA Region 4 soil screening levels - lowest value	1		0.0110 U		0.0120 U		0.0110 U		0.0100 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300		0.0110 U		0.0120 U		0.0110 U		0.0100 U
Acetone	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.0110 U		0.0120 U		0.0110 U		0.0100 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-137		PR79-SB-138		PR79-SB-139		PR79-SB-140	
			Sample ID	PR79-SB-137-AS-01	PR79-SB-137-BS-01	PR79-SB-138-AS-01	PR79-SB-138-BS-01	PR79-SB-139-AS-01	PR79-SB-139-BS-01	PR79-SB-140-AS-01	PR79-SB-140-BS-01
			Sampling Date	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Benzene	Solid	USEPA Region 4 soil screening levels - lowest value	.12		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Bromomethane	Solid	USEPA Region 4 soil screening levels - lowest value	.002		0.00440 U		0.00480 U		0.00450 U		0.00400 U
Carbon disulfide	Solid	USEPA Region 4 soil screening levels - lowest value	.005		0.00220 U		0.00240 U		0.00220 UJ		0.00200 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400		0.00440 U		0.00480 U		0.00450 U		0.00400 U
Chloroform	Solid	USEPA Region 4 soil screening levels - lowest value	.05		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11		0.00440 U		0.00480 UJ		0.00450 U		0.00400 U
cis-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Ethylbenzene	Solid	USEPA Region 4 soil screening levels - lowest value	.27		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00220 U		0.00240 U		0.00220 U		0.00200 U
m,p-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1		0.00440 U		0.00480 U		0.00450 U		0.00400 U
Methylene chloride	Solid	USEPA Region 4 soil screening levels - lowest value	.21		0.0110 U		0.0120 U		0.0110 U		0.0100 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390		0.00220 U		0.00240 U		0.00220 U		0.00200 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380		0.00220 U		0.00240 U		0.00220 U		0.00200 U
o-Xylene	Solid	USEPA Region 4 soil screening levels - lowest value	.1		0.00220 U		0.00240 U		0.00220 U		0.00200 U
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 soil screening levels - lowest value	.18		0.00220 U		0.00240 U		0.00220 U		0.00200 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780		0.00220 U		0.00240 U		0.00220 U		0.00200 U
tert-Butyl alcohol	Solid				0.0110 U		0.0120 U		0.0110 U		0.0100 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Toluene	Solid	USEPA Region 4 soil screening levels - lowest value	.15		0.00220 U		0.00240 U		**0.00200 J**		0.00200 U
trans-1,2-Dichloroethene	Solid	USEPA Region 4 soil screening levels - lowest value	.04		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Trichloroethene (TCE)	Solid	USEPA Region 4 soil screening levels - lowest value	.06		0.00220 U		0.00240 U		0.00220 U		0.00200 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02		0.00440 U		0.00480 U		0.00450 U		0.00400 U

Table A-1
Summary of Detected Analytical Results in Background Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

Location	PR79-SB-137		PR79-SB-138		PR79-SB-139		PR79-SB-140	
Sample ID	PR79-SB-137-AS-01	PR79-SB-137-BS-01	PR79-SB-138-AS-01	PR79-SB-138-BS-01	PR79-SB-139-AS-01	PR79-SB-139-BS-01	PR79-SB-140-AS-01	PR79-SB-140-BS-01
Sampling Date	27-Apr-20	27-Apr-20	28-Apr-20	28-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value. Note that any indication of bias that was applied during validation is not presented in the tables in Appendix A. Refer to the Appendix P Data Validation Memoranda reports for details.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided.
Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.
R - Rejected - The data is unusable.

Table A-2 Summary of Detected Analytical Results in Surface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-101	PR79-SB-102	PR79-SB-103	PR79-SB-104	PR79-SB-105
			Sample ID	PR79-SB-101-AS-01	PR79-SB-102-AS-01	PR79-SB-103-AS-01	PR79-SB-104-AS-01	PR79-SB-105-AS-01
			Sampling Date	05-May-20	30-Apr-20	04-May-20	01-May-20	29-Apr-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**					
Total Organic Carbon	Solid			**11000**	**4200**	**16000**	**7900**	**19000**
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**					
pH	Solid			**6.40 J**	**6.10 J**	**7.30 J**	**6.50 J**	**6.70 J**
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.0170 J**	**0.00530 J**	**0.0789**	**0.0100 J**	**0.0260 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**7110**	**6840**	**7200**	**6430**	**9600**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0470 U	0.0430 U	**0.0310 J**	0.0460 U	0.0500 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.10**	**0.680**	**1.89**	**1.20**	**1.20**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**25.7**	**61.2**	**21.1**	**31.6**	**31.8**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.180**	**0.162**	**0.244**	**0.247**	**0.377**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0470 J**	**0.0400 J**	**0.0815 J**	**0.0590 J**	**0.0350 J**
Calcium	Solid			**760**	**1160**	**1330**	**1030**	**757**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**4.26**	**5.27**	**9.30**	**6.05**	**7.66**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**2.52**	**3.04 J**	**2.68**	**2.58 J**	**2.28**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**4.23**	**7.47**	**7.68**	**6.01**	**4.00**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**7310**	**8920**	**9780**	**6900**	**8410**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**4.16**	**2.51**	**10.8**	**7.06**	**5.05**
Magnesium	Solid			**1250**	**2650**	**1930**	**1410**	**1460**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**119**	**150**	**137**	**133**	**112**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**2.77**	**3.44**	**7.81**	**3.45**	**3.92**
Potassium	Solid			**1220**	**3360**	**753**	**1030**	**878**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.200 J**	**0.0350 J**	**0.160 J**	**0.120 J**	**0.270 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	0.940 U	**0.504 J**	0.990 U	**0.408 J**	**0.535 J**
Sodium	Solid			47.0 U	87.0 U	99.0 U	46.0 U	100 U
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.0770 J**	**0.135**	**0.0650 J**	**0.0620 J**	**0.0820 J**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**11.3**	**14.4**	**12.5**	**12.2**	**16.4**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**17.4**	**17.0**	**26.2**	**17.0**	**15.0**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	20.0 U	**19.0 J**	20.0 U	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5		25.0 U			
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00170 J**	**0.00150 J**	0.0550 UJ	**0.00200 J**	0.0590 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0100 U	0.0100 U	**0.00300 J**	0.0110 U	0.0120 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.0100 U	0.0100 U	**0.150**	0.0110 U	0.0120 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0100 U	0.0100 U	0.0110 U	0.0110 U	0.0120 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.0100 U	0.0100 U	**0.430**	0.0110 U	0.0120 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 UJ	0.0100 U	**2.30**	**0.00670 J**	**0.00270 J**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0100 U	0.0100 U	**2.00**	**0.00850 J**	0.0120 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 UJ	0.0100 U	**2.90**	**0.0120 J**	0.0120 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0100 U	0.0100 U	**1.30**	**0.0120 J**	**0.00240 J**
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0100 U	**0.950**	**0.00670 J**	0.0120 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	**0.00250 J**	**0.00200 J**	**2.10**	**0.00880 J**	**0.00440 J**
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0100 U	0.0100 U	**0.210**	0.0110 U	0.0120 U
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00320 J**	**0.00210 J**	**3.50**	**0.0100 J**	0.0120 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0100 U	0.0100 U	**0.150**	0.0110 U	0.0120 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0100 U	**1.20**	**0.00790 J**	**0.00270 J**
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0100 U	0.0100 U	0.0110 U	0.0110 U	0.0120 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0510 U	0.0510 U	**0.0260 J**	0.0540 U	0.0590 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.0100 U	0.0100 U	**2.50**	**0.00370 J**	**0.00290 J**
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00300 J**	**0.00260 J**	**4.00**	**0.0150 J**	**0.00360 J**

Table A-2 Summary of Detected Analytical Results in Surface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-106	PR79-SB-107	PR79-SB-108	
			Sample ID	PR79-SB-106-AS-01	PR79-SB-107-AS-01	PR79-SB-108-AS-01	PR79-SB-FD01-01 (FD)
			Sampling Date	05-May-20	30-Apr-20	06-May-20	06-May-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**				
Total Organic Carbon	Solid			**12000 J**	**14000**	**5700 J**	**12000 J**
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**				
pH	Solid			**6.80 J**	**5.80 J**	**7.30 J**	**7.40 J**
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.00990 J**	**0.0370 J**	**0.0350 J**	**0.0460**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**7500**	**14800**	**8460**	**8830**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0540 U	**0.0220 J**	**0.0320 J**	0.0500 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.00**	**12.5**	**2.07**	**2.10**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**39.8**	**42.7**	**54.8**	**60.5**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.219**	**0.483**	**0.371**	**0.354**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0380 J**	**0.0540 J**	**0.0965 J**	**0.0854 J**
Calcium	Solid			**1390**	**774**	**2860 J**	**1700 J**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**6.73**	**12.8**	**14.1**	**16.1**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**2.86**	**3.99 J**	**5.04**	**5.34**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**4.50**	**6.28**	**7.25**	**6.55**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**9120**	**11900**	**9100**	**9730**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**3.95**	**40.4**	**5.44**	**4.50**
Magnesium	Solid			**1900**	**2440**	**3200**	**3660**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**161**	**170**	**160**	**158**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**4.10**	**7.73**	**9.58**	**10.1**
Potassium	Solid			**1980**	**804**	**2060**	**2460**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.110 J**	**0.350 J**	**0.120 J**	**0.0780 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	1.10 U	**0.790 J**	0.990 U	0.990 U
Sodium	Solid			**123**	100 U	99.0 U	99.0 U
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.102 J**	**0.101**	**0.138**	**0.126**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**13.7**	**24.8**	**19.2**	**21.6**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**21.2**	**23.1**	**50.4**	**47.3**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**				
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	20.0 U	20.0 U	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 U	25.0 U	25.0 U	25.0 U
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00160 J**	**0.00180 J**	0.0550 UJ	0.0500 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00960 UJ	**0.00260 J**	**0.00230 J**	**0.00200 J**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00960 UJ	**0.00510 J**	0.0110 UJ	**0.00320 J**
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	**0.00210 J**	**0.00300 J**	0.0110 U	0.0100 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.00960 U	**0.00400 J**	**0.00320 J**	**0.00290 J**
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00620 J**	**0.00520 J**	**0.00350 J**	**0.00370 J**
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.00270 J**	0.0120 U	0.0110 U	0.0100 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.00960 U	0.0120 U	0.0110 U	0.0100 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0480 U	0.0590 U	0.0550 U	0.0500 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	**0.00410 J**	**0.00260 J**	**0.00220 J**	**0.00200 J**
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.00550 J**	**0.00630 J**	**0.00530 J**	**0.00500 J**

Table A-2 Summary of Detected Analytical Results in Surface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-109	PR79-SB-110	PR79-SB-111	PR79-SB-112	PR79-SB-113
			Sample ID	PR79-SB-109-AS-01	PR79-SB-110-AS-01	PR79-SB-111-AS-01	PR79-SB-112-AS-01	PR79-SB-113-AS-01
			Sampling Date	06-May-20	06-May-20	08-May-20	07-May-20	07-May-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**					
Total Organic Carbon	Solid			**17000**	**5800**	**14000**	**4000**	**3900 J**
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**					
pH	Solid			**5.70 J**	**6.90 J**	**6.60 J**	**7.00 J**	**6.50 J**
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.0270 J**	**0.00850 J**	**0.0220 J**	0.0180 U	**0.00910 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**11500**	**7040**	**13100**	**8290**	**9440**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0530 U	0.0540 U	**0.0300 J**	**0.0340 J**	**0.0200 J**
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.75**	**0.850**	**1.85**	**1.56**	**1.10**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**39.8**	**40.4**	**59.1**	**31.4**	**65.1 J**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.523**	**0.292**	**0.448**	**0.296**	**0.305**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0650 J**	**0.0220 J**	**0.0593 J**	**0.0440 J**	**0.0370 J**
Calcium	Solid			**810**	**1290**	**1640**	**1080**	**1760**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**10.3**	**4.52**	**13.2**	**7.21**	**19.1**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**3.50**	**2.36**	**4.80**	**3.39**	**5.41**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**5.04**	**3.64**	**7.85**	**4.80**	**9.25**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**10100**	**7170**	**12400**	**8500**	**10600**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**11.0**	**3.29**	**6.85**	**5.32**	**3.09**
Magnesium	Solid			**1900**	**1410**	**2750**	**1600**	**3560 J**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**153**	**143**	**183**	**127**	**160**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**5.96**	**2.66**	**7.27**	**4.17**	**10.6**
Potassium	Solid			**1070**	**1720**	**2120**	**1170**	**2380 J**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.320 J**	**0.0420 J**	**0.270 J**	**0.220 J**	**0.100 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	1.00 U	0.430 U	**0.190 J**	**0.368 J**	**0.395 J**
Sodium	Solid			53.0 U	110 U	**75.3**	92.0 U	**109**
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.102**	**0.0850 J**	**0.134**	**0.0906 J**	**0.124**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**19.8**	**10.7**	**25.9**	**15.5**	**23.2**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**23.0**	**18.9**	**23.0**	**18.0**	**18.5**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Chromium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	1100					
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	**6.40 J**	20.0 U	**6.10 J**	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 U		25.0 U		25.0 U
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0530 UJ	0.0460 UJ	**0.00170 J**	**0.00210 J**	**0.00160 J**
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	**0.00670 J**	0.00920 U	0.0110 U	0.0110 U	0.0110 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	**0.0630**	0.00920 U	0.0110 U	**0.00990 J**	0.0110 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0100 U	0.00920 U	0.0110 U	0.0110 U	0.0110 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	**0.100**	0.00920 U	**0.00160 J**	**0.0210 J**	**0.00900 J**
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.230 J**	**0.00200 J**	**0.00790 J**	**0.0810**	**0.0260**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.170**	0.00920 U	**0.00660 J**	**0.0560**	**0.0170 J**
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.200 J**	**0.00280 J**	**0.0110 J**	**0.0890**	**0.0270**
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	**0.120**	0.00920 U	**0.00500 J**	**0.0320**	**0.0120 J**
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.0990**	0.00920 U	**0.00510 J**	**0.0360**	**0.0100 J**
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	**0.220**	**0.00330 J**	**0.00910 J**	**0.0760**	**0.0240**
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.0360 J**	0.00920 U	0.0110 U	**0.0110 J**	**0.00220 J**
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.390**	**0.00290 J**	**0.0170 J**	**0.170 J**	**0.0560 J**
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	**0.0500**	0.00920 U	0.0110 U	**0.00780 J**	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.120**	0.00920 U	**0.00510 J**	**0.0290**	**0.0120 J**
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	**0.00590 J**	0.00920 U	0.0110 U	0.0110 U	0.0110 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0530 U	0.0460 U	0.0530 U	0.0550 U	0.0560 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	**0.420**	0.00920 U	**0.00810 J**	**0.100 J**	**0.0370 J**
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.580**	**0.00490 J**	**0.0130 J**	**0.120 J**	**0.0420 J**

Table A-2 Summary of Detected Analytical Results in Surface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-113	PR79-SB-117	PR79-SB-118
			Sample ID	PR79-SB-FD03-01 (FD)	PR79-SB-117-AS-01	PR79-SB-118-AS-01
			Sampling Date	07-May-20	11-May-20	11-May-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**			
Total Organic Carbon	Solid			440 UJ	**5100**	**6700**
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**			
pH	Solid			**6.60 J**	**5.60 J**	**5.60 J**
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**			
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.0100 J**	**0.00980 J**	**0.0150 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**			
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**11900**	**7760**	**7950**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	0.0470 U	**0.0240 J**	0.0440 UJ
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.10**	**2.19**	**1.84**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**133 J**	**26.2**	**22.6**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.329**	**0.310**	**0.241**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0400 J**	**0.0440 J**	**0.0600 J**
Calcium	Solid			**2500**	**830**	**765 J**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**31.2**	**8.52**	**5.75**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**7.80**	**2.61**	**3.18**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**12.5**	**3.36**	**4.54**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**14700**	**8860**	**8840**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**3.12**	**5.00**	**4.40**
Magnesium	Solid			**6250 J**	**1580**	**1270 J**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**198**	**118**	**128 J**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**17.2**	**3.98**	**3.27**
Potassium	Solid			**4470 J**	**833**	**1160 J**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.0980 J**	**0.190 J**	**0.190 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**0.250 J**	**0.201 J**	**0.252 J**
Sodium	Solid			**240**	71.0 U	88.0 U
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.167**	**0.0680 J**	**0.0820 J**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**32.2**	**13.1**	**12.4**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**23.7**	**19.6**	**22.0**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Chromium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	1100	**3.10 J**		
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	20.0 U	20.0 UJ
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 U		
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**			
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0510 UJ	0.0530 UJ	0.0540 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0100 U	0.0100 U	0.0110 U
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	**0.00430 J**	0.0100 U	0.0110 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0100 U	0.0100 U	0.0110 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	**0.0120 J**	0.0100 U	0.0110 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.0300**	0.0100 U	0.0110 U
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.0190 J**	0.0100 U	0.0110 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.0300**	0.0100 U	0.0110 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	**0.0120 J**	0.0100 U	0.0110 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.0130 J**	0.0100 U	0.0110 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	**0.0300**	**0.00220 J**	0.0110 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.00340 J**	0.0100 U	0.0110 U
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.0750 J**	**0.00240 J**	0.0110 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0100 U	0.0100 U	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.0120 J**	0.0100 U	0.0110 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0100 U	0.0100 U	0.0110 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0510 U	0.0530 U	0.0540 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	**0.0520 J**	0.0100 U	0.0110 U
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	**0.0500 J**	**0.00340 J**	0.0110 U

Table A-2 Summary of Detected Analytical Results in Surface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-119	PR79-SB-120
			Sample ID	PR79-SB-119-AS-01	PR79-SB-120-AS-01
			Sampling Date	11-May-20	15-May-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**		
Total Organic Carbon	Solid			**7300**	**8600 J**
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**		
pH	Solid			**5.60 J**	**6.00 J**
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
Mercury	Solid	USEPA Region 4 soil screening levels - lowest value	.013	**0.0150 J**	**0.0320**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**8470**	**6890**
Antimony	Solid	USEPA Eco-SSLs - lowest value	.27	**0.0220 J**	**0.170**
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.66**	**1.20**
Barium	Solid	USEPA Region 4 soil screening levels - lowest value	110	**21.6**	**24.7**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.275**	**0.261**
Cadmium	Solid	USEPA Eco-SSLs - lowest value	.36	**0.0550 J**	**0.0290 J**
Calcium	Solid			**635**	**594**
Chromium	Solid	USEPA Region 4 soil screening levels - lowest value	23	**6.66**	**5.35**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**2.70**	**2.44**
Copper	Solid	USEPA Eco-SSLs - lowest value	28	**3.94**	**3.39**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**9380**	**7760**
Lead	Solid	USEPA Eco-SSLs - lowest value	11	**4.69**	**3.68**
Magnesium	Solid			**1100**	**1280**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**95.6**	**123**
Nickel	Solid	USEPA Eco-SSLs - lowest value	38	**3.47**	**3.08**
Potassium	Solid			**719**	**1320**
Selenium	Solid	USEPA Eco-SSLs - lowest value	.52	**0.220 J**	**0.200 J**
Silver	Solid	USEPA Eco-SSLs - lowest value	4.2	**0.338 J**	**0.351 J**
Sodium	Solid			47.0 U	50.0 U
Thallium	Solid	USEPA Region 4 soil screening levels - lowest value	.05	**0.0880 J**	**0.100**
Vanadium	Solid	USEPA Eco-SSLs - lowest value	7.8	**12.9**	**11.6**
Zinc	Solid	USEPA Eco-SSLs - lowest value	46	**19.8**	**16.8**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**		
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5		25.0 U
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0560 UJ	**0.00110 J**
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0110 U	**0.0340**
Acenaphthene	Solid	USEPA Eco-SSLs - lowest value	29	0.0110 U	0.0100 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0110 U	0.0100 U
Anthracene	Solid	USEPA Eco-SSLs - lowest value	29	0.0110 U	**0.00320 J**
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	**0.0110 J**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 U	**0.0130 J**
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	**0.0110 J**
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0110 U	**0.00930 J**
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	**0.00520 J**
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.0110 U	**0.0230**
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 U	0.0100 UJ
Fluoranthene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0110 U	**0.00860 J**
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0110 U	**0.00460 J**
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	**0.00490 J**
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0110 U	**0.00980 J**
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0560 U	0.0500 U
Phenanthrene	Solid	USEPA Eco-SSLs - lowest value	29	0.0110 U	**0.0220**
Pyrene	Solid	USEPA Eco-SSLs - lowest value	1.1	0.0110 U	**0.0230**

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-101	PR79-SB-102	PR79-SB-103	PR79-SB-104
			Sample ID	PR79-SB-101-BS-01	PR79-SB-102-BS-01	PR79-SB-103-BS-01	PR79-SB-104-BS-01
			Sampling Date	05-May-20	30-Apr-20	04-May-20	01-May-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
Mercury	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	0.0170 U	0.0150 U	0.0140 U	0.0150 U
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**8750**	**8470**	**9890**	**8230**
Antimony	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.1	0.0450 U	0.0460 U	0.0490 U	0.0550 UJ
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**0.500**	**0.490**	**0.780**	**0.540 J**
Barium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1500	**62.0**	**59.5**	**66.7**	**60.5**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.354**	**0.296**	**0.472**	**0.351**
Cadmium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7.1	**0.0180 J**	**0.0130 J**	**0.0180 J**	**0.0210 J**
Calcium	Solid			**1300**	**1400**	**1400**	**2070**
Chromium	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	1400	**9.06**	**11.0**	**11.6**	**6.78**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**3.18**	**3.47 J**	**3.99**	**2.38 J**
Copper	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	310	**9.79**	**7.94**	**8.42**	**4.18**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**8580**	**8820**	**11000**	**7460**
Lead	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	150	**1.99**	**1.73**	**2.38**	**1.88**
Magnesium	Solid			**2700**	**2990**	**3980**	**1960 J**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**180**	**164**	**181**	**144 J**
Nickel	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	150	**5.42**	**6.28**	**7.11**	**3.53**
Potassium	Solid			**2910**	**2600**	**3530**	**2230 J**
Selenium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	0.270 U	0.270 U	0.290 U	0.330 U
Silver	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	0.910 U	**0.508 J**	0.970 U	**0.536 J**
Sodium	Solid			**99.6**	**97.3**	**109**	**170**
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	**0.142**	**0.167**	**0.190**	**0.0950 J**
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**15.5**	**16.8**	**22.7**	**13.8**
Zinc	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2300	**17.3**	**17.1**	**23.2**	**13.6**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**				
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	20.0 U	**7.00 J**	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 U	25.0 U	25.0 U	
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00210 J**	**0.00130 J**	**0.00270 J**	**0.00160 J**
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Acenaphthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	43	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	35	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00980 UJ	0.0100 U	**0.00210 J**	0.0110 U
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00980 UJ	0.0100 U	0.0100 U	0.0110 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.00980 U	**0.00200 J**	**0.00260 J**	**0.00210 J**
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	20	0.00980 U	0.0100 U	**0.00690 J**	0.0110 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.00980 U	0.0100 U	0.0100 U	0.0110 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0490 U	0.0520 U	0.0500 U	0.0540 U
Phenanthrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	40	0.00980 U	0.0100 U	**0.00350 J**	0.0110 U
Pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	13	0.00980 U	0.0100 U	**0.00560 J**	0.0110 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
1,1,1-Trichloroethane	Solid	RIDEM Method 1 Leachability Criteria (GA)	11	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,1-Dichloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.6	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,1-Dichloroethene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.2	0.00180 U	0.00190 U	0.00200 U	0.00200 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-101	PR79-SB-102	PR79-SB-103	PR79-SB-104
			Sample ID	PR79-SB-101-BS-01	PR79-SB-102-BS-01	PR79-SB-103-BS-01	PR79-SB-104-BS-01
			Sampling Date	05-May-20	30-Apr-20	04-May-20	01-May-20
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,2,4-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,2,4-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	30	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,2-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,3,5-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	27	0.00180 U	0.00190 U	0.00200 U	0.00200 U
1,3-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00180 U	0.00190 U	0.00200 U	0.00200 U
2-Butanone (MEK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2700	0.00920 U	0.00950 U	0.0100 U	0.0100 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.00920 U	0.00950 U	0.0100 U	0.0100 U
Acetone	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6100	0.00920 U	0.00950 U	**0.00490 J**	0.0100 U
Benzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Bromomethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	0.00370 U	0.00380 U	0.00400 U	0.00400 U
Carbon disulfide	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	77	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00370 U	0.00380 U	0.00400 U	0.00400 U
Chloroform	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.32	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00370 U	0.00380 U	0.00400 U	0.00400 U
cis-1,2-Dichloroethene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	16	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Ethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Isopropylbenzene (Cumene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	27	0.00180 U	0.00190 U	0.00200 U	0.00200 U
m,p-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	55	0.00370 U	0.00380 U	0.00400 U	0.00400 U
Methylene chloride	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	35	0.00920 U	**0.0120 J**	**0.00890 J**	**0.00740 J**
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00180 U	0.00190 U	0.00200 U	0.00200 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00180 U	0.00190 U	0.00200 U	0.00200 U
o-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	65	0.00180 U	0.00190 U	0.00200 U	0.00200 U
p-Cymene (p-Isopropyltoluene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Res Soil) Alternate Compound Selection	27	0.00180 U	0.00190 U	0.00200 U	0.00200 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00180 U	0.00190 U	0.00200 U	0.00200 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.00920 U	0.00950 U	0.0100 U	0.0100 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Toluene	Solid	RIDEM Method 1 Leachability Criteria (GA)	32	0.00180 U	0.00190 U	0.00200 U	0.00200 U
trans-1,2-Dichloroethene	Solid	RIDEM Method 1 Leachability Criteria (GA)	3.3	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Trichloroethene (TCE)	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00180 U	0.00190 U	0.00200 U	0.00200 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00370 U	0.00380 U	0.00400 U	0.00400 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-105	PR79-SB-106	PR79-SB-107	PR79-SB-108	PR79-SB-108
			Sample ID	PR79-SB-105-BS-01	PR79-SB-106-BS-01	PR79-SB-107-BS-01	PR79-SB-108-BS-01	PR79-SB-FD02-01 (FD)
			Sampling Date	29-Apr-20	05-May-20	30-Apr-20	06-May-20	06-May-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
Mercury	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**0.0230 J**	0.0160 U	0.0160 U	0.0140 U	0.0150 U
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**7950**	**9110**	**4900**	**6580**	**7570**
Antimony	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.1	0.0510 U	0.0500 U	0.0380 U	0.0490 U	0.0530 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**0.800**	**0.550**	**0.500**	**0.680**	**0.850**
Barium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1500	**78.9**	**85.0**	**33.5**	**80.7**	**112**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.178**	**0.418**	**0.182**	**0.194**	**0.193**
Cadmium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7.1	**0.0160 J**	**0.0200 J**	**0.0190 J**	**0.0310 J**	**0.0460 J**
Calcium	Solid			**1870**	**1630**	**1410**	**1860**	**2040**
Chromium	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	1400	**5.25**	**10.7**	**2.95**	**7.89**	**8.82**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**3.35**	**5.46**	**1.84 J**	**4.20**	**4.31**
Copper	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	310	**4.25**	**8.58**	**2.95**	**7.04**	**8.88**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**11500**	**10500**	**4730**	**9220**	**10800**
Lead	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	150	**1.73**	**2.05**	**1.34**	**1.78 J**	**3.57 J**
Magnesium	Solid			**2860**	**3330**	**978**	**2430**	**2730**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**222**	**186**	**93.2**	**163**	**187**
Nickel	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	150	**3.42**	**7.04**	**1.98**	**4.81**	**5.28**
Potassium	Solid			**3890**	**3120**	**1250**	**3170**	**3720**
Selenium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	0.300 U	0.300 U	0.230 U	0.300 U	0.320 U
Silver	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**0.726 J**	0.990 U	**0.365 J**	0.980 U	1.10 U
Sodium	Solid			**111**	**109**	**132**	**173**	**148**
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	**0.138**	**0.162**	**0.0470 J**	**0.132**	**0.143**
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**20.8**	**22.3**	**8.07**	**18.0**	**20.1**
Zinc	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2300	**23.0**	**19.7**	**8.54**	**22.8**	**31.1**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	20.0 UJ	**6.70 J**	20.0 U	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 U	25.0 UJ		25.0 U	25.0 U
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0500 UJ	**0.00290 J**	**0.00230 J**	0.0490 UJ	**0.00130 J**
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Acenaphthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	43	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	35	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0100 UJ	0.0100 U	0.00990 UJ	0.00980 UJ
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0100 UJ	0.0100 U	0.00990 UJ	0.00980 UJ
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	20	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0500 U	0.0520 U	0.0500 U	0.0490 U	0.0490 U
Phenanthrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	40	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
Pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	13	0.0100 U	0.0100 U	0.0100 U	0.00990 U	0.00980 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**					
1,1,1-Trichloroethane	Solid	RIDEM Method 1 Leachability Criteria (GA)	11	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,1-Dichloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.6	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,1-Dichloroethene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.2	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,2,4-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,2,4-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	30	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,2-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
1,3,5-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	27	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-105	PR79-SB-106	PR79-SB-107	PR79-SB-108	PR79-SB-108
			Sample ID	PR79-SB-105-BS-01	PR79-SB-106-BS-01	PR79-SB-107-BS-01	PR79-SB-108-BS-01	PR79-SB-FD02-01 (FD)
			Sampling Date	29-Apr-20	05-May-20	30-Apr-20	06-May-20	06-May-20
1,3-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
2-Butanone (MEK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2700	0.00880 U	0.0110 U	0.0110 U	0.0120 U	0.00920 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.00880 U	0.0110 U	0.0110 U	0.0120 U	0.00920 U
Acetone	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6100	0.00880 U	0.0110 U	0.0110 U	**0.0120 J**	**0.0120 J**
Benzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Bromomethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	0.00350 U	0.00440 U	0.00460 U	0.00480 U	0.00370 U
Carbon disulfide	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	77	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00350 U	0.00440 U	0.00460 U	0.00480 U	0.00370 U
Chloroform	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.32	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00350 U	0.00440 U	0.00460 U	0.00480 U	0.00370 U
cis-1,2-Dichloroethene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	16	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Ethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Isopropylbenzene (Cumene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	27	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
m,p-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	55	0.00350 U	0.00440 U	0.00460 U	0.00480 U	0.00370 U
Methylene chloride	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	35	0.00880 U	0.0110 U	**0.00890 J**	**0.0100 J**	**0.0130 J**
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
o-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	65	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
p-Cymene (p-Isopropyltoluene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Res Soil) Alternate Compound Selection	27	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.00880 U	0.0110 U	0.0110 U	0.0120 U	0.00920 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Toluene	Solid	RIDEM Method 1 Leachability Criteria (GA)	32	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
trans-1,2-Dichloroethene	Solid	RIDEM Method 1 Leachability Criteria (GA)	3.3	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Trichloroethene (TCE)	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00180 U	0.00220 U	0.00230 U	0.00240 U	0.00180 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00350 U	0.00440 U	0.00460 U	0.00480 U	0.00370 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-109	PR79-SB-110	PR79-SB-111	PR79-SB-112
			Sample ID	PR79-SB-109-BS-01	PR79-SB-110-BS-01	PR79-SB-111-BS-01	PR79-SB-112-BS-01
			Sampling Date	06-May-20	06-May-20	08-May-20	07-May-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
Mercury	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	0.0180 U	0.0170 U	0.0140 U	**0.00880 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**9190**	**17100**	**5800**	**7560**
Antimony	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.1	0.0520 U	0.0520 U	0.0310 U	0.0500 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.00**	**0.820**	**0.500**	**1.30**
Barium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1500	**107**	**114**	**48.1**	**30.6**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.310**	**0.263**	**0.202**	**0.245**
Cadmium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7.1	**0.0360 J**	**0.0290 J**	**0.0240 J**	**0.0250 J**
Calcium	Solid			**1730**	**6720**	**1530**	**1020**
Chromium	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	1400	**8.41**	**25.2**	**8.53**	**6.71**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**4.66**	**9.54**	**3.83**	**2.93**
Copper	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	310	**8.81**	**12.1**	**6.83**	**5.20**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**12200**	**17200**	**7520**	**8160**
Lead	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	150	**2.57**	**3.22**	**1.64**	**4.03**
Magnesium	Solid			**3320**	**6500**	**2440**	**1590**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**224**	**317**	**139**	**144**
Nickel	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	150	**5.04**	**13.8**	**5.18**	**4.07**
Potassium	Solid			**4300**	**5600**	**2600**	**1310**
Selenium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	0.310 U	0.310 U	0.190 U	**0.140 J**
Silver	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	1.00 U	1.00 U	**0.120 J**	**0.371 J**
Sodium	Solid			**105**	**1030**	**147**	100 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	**0.189**	**0.210**	**0.107**	**0.0740 J**
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**21.7**	**34.2**	**14.6**	**14.4**
Zinc	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2300	**25.9**	**33.5**	**13.7**	**15.0**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**				
Chromium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	1100		20.0 U		
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 UJ	**7.60 J**	20.0 UJ	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 UJ	25.0 U	25.0 UJ	
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0470 UJ	**0.00140 J**	**0.00120 J**	0.0480 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.00930 U	0.00960 U	0.00920 U	0.00960 U
Acenaphthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	43	0.00930 U	0.00960 U	0.00920	**0.00480 J**
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.00930 U	0.00960 U	0.00920 U	0.00960 U
Anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	35	0.00930 U	0.00960 U	0.00920 U	**0.00850 J**
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00930 UJ	0.00960 UJ	0.00920 U	**0.0230**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00930 U	0.00960 U	0.00920 U	**0.0160 J**
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00930 UJ	0.00960 UJ	0.00920 U	**0.0250**
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	0.00930 U	0.00960 U	0.00920 U	**0.0110 J**
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00930 U	0.00960 U	0.00920 U	**0.0100 J**
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	0.00930 U	0.00960 U	0.00920 U	**0.0200**
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.00930 U	0.00960 U	0.00920 U	**0.00250 J**
Fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	20	0.00930 U	0.00960 U	0.00920 U	**0.0490 J**
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.00930 U	0.00960 U	0.00920 U	**0.00370 J**
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.00930 U	0.00960 U	0.00920 U	**0.0120 J**
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.00930 U	0.00960 U	0.00920 U	0.00960 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0470 U	0.0480 U	0.0460 U	0.0480 U
Phenanthrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	40	0.00930 U	0.00960 U	0.00920 U	**0.0340 J**
Pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	13	0.00930 U	0.00960 U	0.00920 U	**0.0350 J**
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**				
1,1,1-Trichloroethane	Solid	RIDEM Method 1 Leachability Criteria (GA)	11	0.00210 U	0.00190 U	0.00240 U	0.00200 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-109	PR79-SB-110	PR79-SB-111	PR79-SB-112
			Sample ID	PR79-SB-109-BS-01	PR79-SB-110-BS-01	PR79-SB-111-BS-01	PR79-SB-112-BS-01
			Sampling Date	06-May-20	06-May-20	08-May-20	07-May-20
1,1-Dichloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.6	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,1-Dichloroethene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.2	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,2,4-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,2,4-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	30	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,2-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,3,5-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	27	0.00210 U	0.00190 U	0.00240 U	0.00200 U
1,3-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00210 U	0.00190 U	0.00240 U	0.00200 U
2-Butanone (MEK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2700	0.0100 U	0.00950 U	0.0120 U	0.0100 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.0100 U	0.00950 U	0.0120 U	0.0100 U
Acetone	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6100	**0.0180 J**	**0.00650 J**	0.0120 U	0.0100 U
Benzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Bromomethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	0.00420 U	0.00380 U	0.00470 U	0.00410 U
Carbon disulfide	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	77	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00420 U	0.00380 U	0.00470 U	0.00410 U
Chloroform	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.32	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00420 U	0.00380 U	0.00470 U	0.00410 U
cis-1,2-Dichloroethene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	16	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Ethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Isopropylbenzene (Cumene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	27	0.00210 U	0.00190 U	0.00240 U	0.00200 U
m,p-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	55	0.00420 U	0.00380 U	0.00470 U	0.00410 U
Methylene chloride	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	35	**0.0120 J**	0.00950 U	0.0120 U	**0.00870 J**
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00210 U	0.00190 U	0.00240 U	0.00200 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00210 U	0.00190 U	0.00240 U	0.00200 U
o-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	65	0.00210 U	0.00190 U	0.00240 U	0.00200 U
p-Cymene (p-Isopropyltoluene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Res Soil) Alternate Compound Selection	27	0.00210 U	0.00190 U	0.00240 U	0.00200 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00210 U	0.00190 U	0.00240 U	0.00200 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0100 U	0.00950 U	0.0120 U	0.0100 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Toluene	Solid	RIDEM Method 1 Leachability Criteria (GA)	32	0.00210 U	0.00190 U	0.00240 U	0.00200 U
trans-1,2-Dichloroethene	Solid	RIDEM Method 1 Leachability Criteria (GA)	3.3	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Trichloroethene (TCE)	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00210 U	0.00190 U	0.00240 U	0.00200 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00420 U	0.00380 U	0.00470 U	0.00410 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil 2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-113	PR79-SB-113	PR79-SB-114	PR79-SB-115	PR79-SB-116	PR79-SB-117
			Sample ID	PR79-SB-113-BS-01	PR79-SB-FD04-01 (FD)	PR79-SB-114-BS-01	PR79-SB-115-BS-01	PR79-SB-116-BS-01	PR79-SB-117-BS-01
			Sampling Date	07-May-20	07-May-20	08-May-20	13-May-20	13-May-20	11-May-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**0.00650 J**	**0.00590 J**	0.0160 U	**0.0140 J**	**0.0936**	**0.0270 J**
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**14000**	**13800**	**8000**	**14200**	**13600**	**12800**
Antimony	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.1	**0.0280 J**	**0.0290 J**	0.0440 U	0.0460 U	0.0530 U	**0.0380 J**
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.57**	**1.70**	**0.610**	**0.610**	**0.680**	**2.61**
Barium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1500	**116**	**113**	**76.6**	**140**	**140**	**36.9**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.274**	**0.283**	**0.231**	**0.250**	**0.183**	**0.379**
Cadmium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7.1	**0.0870 J**	**0.0900**	**0.0300 J**	0.0910 U	0.100 U	**0.0430 J**
Calcium	Solid			**2580**	**2810**	**2180**	**1210**	**1190**	**779**
Chromium	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	1400	**44.7**	**44.3**	**11.9**	**32.2**	**14.6**	**11.8**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**9.50**	**8.41**	**5.45**	**9.99**	**9.14**	**4.07**
Copper	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	310	**23.0**	**19.3**	**7.22**	**36.6**	**16.7**	**8.98**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**16800**	**17200**	**10900**	**23400**	**19400**	**13100**
Lead	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	150	**7.84**	**8.12**	**1.47**	**2.07**	**2.50**	**7.05**
Magnesium	Solid			**7310**	**7010**	**3720**	**8610**	**6330**	**2030**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**305**	**298**	**178**	**398**	**251**	**145**
Nickel	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	150	**18.5**	**18.7**	**8.39**	**15.4**	**12.1**	**6.32**
Potassium	Solid			**6790**	**6390**	**3810**	**8620**	**6250**	**1320**
Selenium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**0.120 J**	**0.120 J**	0.260 U	**0.0630 J**	**0.0900 J**	**0.290 J**
Silver	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**0.210 J**	**0.395 J**	**0.428 J**	**1.31**	**1.05**	**0.190 J**
Sodium	Solid			**384**	**380**	**256**	**349**	**118**	92.0 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	**0.207**	**0.210**	**0.151**	**0.254**	**0.221**	**0.116**
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**37.8**	**38.5**	**23.3**	**59.5**	**40.4**	**23.6**
Zinc	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2300	**34.4**	**35.2**	**20.0**	**40.9**	**30.7**	**20.6**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Chromium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	1100	**21.6 J**	**8.20 J**		20.0 U		
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	20.0 U	**5.70 J**	20.0 U	20.0 U	20.0 U	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00110 J**	**0.00230 J**	**0.00160 J**	0.0520 UJ	0.0500 UJ	0.0570 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	**0.00490 J**	**0.00740 J**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Acenaphthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	43	**0.0330**	**0.0500**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.00950 U	0.0100 U	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	35	**0.0680**	**0.0990**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.250**	**0.370**	0.00990 U	0.0100 UJ	**0.00200 J**	0.0110 U
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.170**	**0.240**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.270**	**0.400**	0.00990 U	0.0100 UJ	0.0100 UJ	0.0110 U
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	**0.100**	**0.150**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.0950**	**0.130**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	**0.220**	**0.340**	**0.00200 J**	0.0100 U	0.0100 U	0.0110 U
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.0350**	**0.0520**	0.00990 U	0.0100 UJ	0.0100 UJ	0.0110 U
Fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	20	**0.550 J**	**0.750 J**	**0.00290 J**	0.0100 UJ	**0.00180 J**	0.0110 U
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	**0.0260**	**0.0410**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.100**	**0.150**	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.00950 U	0.0100 U	0.00990 U	0.0100 U	0.0100 U	0.0110 U
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0470 U	0.0520 U	0.0500 U	0.0520 U	0.0500 U	0.0570 U
Phenanthrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	40	**0.390 J**	**0.620 J**	**0.00210 J**	0.0100 U	**0.00290 J**	0.0110 U
Pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	13	**0.340 J**	**0.630 J**	**0.00240 J**	0.0100 U	0.0100 U	0.0110 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Solid	RIDEM Method 1 Leachability Criteria (GA)	11	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,1-Dichloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.6	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,1-Dichloroethene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.2	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,2,4-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,2,4-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	30	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,2-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,3,5-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	27	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
1,3-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
2-Butanone (MEK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2700	0.0110 U	**0.00540 J**	0.0120 U	0.0100 U	0.0100 U	0.0110 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.0110 U	0.0100 U	0.0120 U	0.0100 U	0.0100 U	0.0110 U
Acetone	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6100	**0.0290**	**0.0290**	**0.0230 J**	**0.0160 J**	**0.00820 J**	**0.00960 J**
Benzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Bromomethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	0.00420 U	0.00420 U	0.00480 U	0.00420 U	0.00420 U	0.00430 U
Carbon disulfide	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	77	**0.00260 J**	**0.00620**	0.00240 U	**0.00320 J**	0.00210 U	0.00220 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00420 U	0.00420 U	0.00480 U	0.00420 U	0.00420 U	0.00430 U
Chloroform	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.32	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil 2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-113	PR79-SB-113	PR79-SB-114	PR79-SB-115	PR79-SB-116	PR79-SB-117
			Sample ID	PR79-SB-113-BS-01	PR79-SB-FD04-01 (FD)	PR79-SB-114-BS-01	PR79-SB-115-BS-01	PR79-SB-116-BS-01	PR79-SB-117-BS-01
			Sampling Date	07-May-20	07-May-20	08-May-20	13-May-20	13-May-20	11-May-20
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00420 U	0.00420 U	0.00480 U	0.00420 U	0.00420 U	0.00430 U
cis-1,2-Dichloroethene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	16	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Ethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Isopropylbenzene (Cumene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	27	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
m,p-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	55	0.00420 U	0.00420 U	0.00480 U	0.00420 U	0.00420 U	0.00430 U
Methylene chloride	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	35	**0.00720 J**	**0.0110 J**	0.0120 U	0.0100 U	0.0100 U	0.0110 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
o-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	65	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
p-Cymene (p-Isopropyltoluene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Res Soil) Alternate Compound Selection	27	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0110 U	0.0100 U	0.0120 U	0.0100 U	0.0100 U	0.0110 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Toluene	Solid	RIDEM Method 1 Leachability Criteria (GA)	32	0.00210 U	**0.00140 J**	0.00240 U	0.00210 U	0.00210 U	0.00220 U
trans-1,2-Dichloroethene	Solid	RIDEM Method 1 Leachability Criteria (GA)	3.3	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Trichloroethene (TCE)	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00210 U	0.00210 U	0.00240 U	0.00210 U	0.00210 U	0.00220 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00420 U	0.00420 U	0.00480 U	0.00420 U	0.00420 U	0.00430 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-118	PR79-SB-119
			Sample ID	PR79-SB-118-BS-01	PR79-SB-119-BS-01
			Sampling Date	11-May-20	11-May-20
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
Mercury	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**0.0220 J**	0.0170 U
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**11700**	**5420**
Antimony	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.1		0.0460 U
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**1.20**	**0.660**
Barium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1500	**85.6**	**34.4**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.228**	**0.162**
Cadmium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7.1	**0.0400 J**	**0.0230 J**
Calcium	Solid			**1220**	**2380**
Chromium	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	1400	**14.9**	**3.78**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**5.70**	**2.79**
Copper	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	310	**12.8**	**5.07**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**15200**	**7700**
Lead	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	150	**3.23**	**1.39**
Magnesium	Solid			**4760 J**	**1520**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**220**	**142**
Nickel	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	150	**8.46**	**2.45**
Potassium	Solid			**4400**	**1950**
Selenium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**0.180 J**	0.280 U
Silver	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**0.392 J**	**0.240 J**
Sodium	Solid			**119**	**117**
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	**0.305**	**0.0700 J**
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**28.1**	**12.3**
Zinc	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2300	**30.7**	**12.2**
METAL_LEACH (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**		
Lead	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	40	**6.30 J**	20.0 U
Thallium	Solid	RIDEM Method 1 Leachability Criteria (GA) (TCLP/SPLP)	5	25.0 UJ	
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0530 UJ	0.0530 UJ
2-Methylnaphthalene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	24	0.0110 U	0.0110 UJ
Acenaphthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	43	0.0110 U	0.0110 UJ
Acenaphthylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	23	0.0110 U	0.0110 UJ
Anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	35	0.0110 U	0.0110 UJ
Benzo(a)anthracene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 UJ
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 U	0.0110 UJ
Benzo(b)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 UJ
Benzo(g,h,i)perylene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.8	**0.00280 J**	0.0110 UJ
Benzo(k)fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	0.0110 U	0.0110 UJ
Chrysene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.4	**0.00290 J**	0.0110 UJ
Dibenz(a,h)anthracene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 U	0.0110 UJ
Fluoranthene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	20	**0.00310 J**	0.0110 UJ
Fluorene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	28	0.0110 U	0.0110 UJ
Indeno(1,2,3-c,d)pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.9	**0.00200 J**	0.0110 UJ
Naphthalene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.8	0.0110 U	0.0110 UJ
Pentachlorophenol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1	0.0530 U	0.0530 UJ
Phenanthrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	40	**0.00230 J**	0.0110 UJ
Pyrene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	13	**0.00410 J**	0.0110 UJ
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**		
1,1,1-Trichloroethane	Solid	RIDEM Method 1 Leachability Criteria (GA)	11	0.00230 U	0.00200 U
1,1-Dichloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3.6	0.00230 U	0.00200 U
1,1-Dichloroethene	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.2	0.00230 U	0.00200 U

Table A-3 Summary of Detected Analytical Results in Subsurface Soil
2020 Spring Soil Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-SB-118	PR79-SB-119
			Sample ID	PR79-SB-118-BS-01	PR79-SB-119-BS-01
			Sampling Date	11-May-20	11-May-20
1,2,3-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6.3	0.00230 UJ	0.00200 U
1,2,4-Trichlorobenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00230 UJ	0.00200 U
1,2,4-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	30	0.00230 UJ	0.00200 U
1,2-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00230 UJ	0.00200 U
1,3,5-Trimethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	27	0.00230 UJ	0.00200 U
1,3-Dichlorobenzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	41	0.00230 UJ	0.00200 U
2-Butanone (MEK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2700	0.0110 U	0.00980 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	3300	0.0110 UJ	0.00980 U
Acetone	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	6100	**0.0150 J**	**0.00500 J**
Benzene	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00230 U	0.00200 U
Bromodichloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.29	0.00230 U	0.00200 U
Bromomethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	0.00460 U	0.00390 U
Carbon disulfide	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	77	0.00230 U	0.00200 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00460 U	0.00390 U
Chloroform	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.32	0.00230 U	0.00200 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00460 U	0.00390 U
cis-1,2-Dichloroethene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	16	0.00230 UJ	0.00200 U
Dibromochloromethane	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	7.6	0.00230 UJ	0.00200 U
Ethylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.8	0.00230 UJ	0.00200 U
Isopropylbenzene (Cumene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	27	0.00230 UJ	0.00200 U
m,p-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	55	0.00460 UJ	0.00390 U
Methylene chloride	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	35	0.0110 U	0.00980 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00230 UJ	0.00200 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00230 UJ	0.00200 U
o-Xylene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	65	0.00230 UJ	0.00200 U
p-Cymene (p-Isopropyltoluene)	Solid	RIDEM Method 1 Direct Exposure Criteria (Res Soil) Alternate Compound Selection	27	0.00230 UJ	0.00200 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00230 UJ	0.00200 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0110 U	0.00980 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00230 UJ	0.00200 U
Toluene	Solid	RIDEM Method 1 Leachability Criteria (GA)	32	0.00230 UJ	0.00200 U
trans-1,2-Dichloroethene	Solid	RIDEM Method 1 Leachability Criteria (GA)	3.3	0.00230 U	0.00200 U
Trichloroethene (TCE)	Solid	RIDEM Method 1 Leachability Criteria (GA)	.2	0.00230 U	0.00200 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00460 U	0.00390 U

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.
R - Rejected - The data is unusable.

Table A-4
Summary of Well Construction
Former NIKE PR-79 Control Area
Foster, Rhode Island

Well/ Piezometer ID	Date Installed	Diameter/ Material	Screened Formation	FLUTe Port Number	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Top of Screen (feet bmp)	Bottom of Screen (feet bmp)	Drilling Refusal (feet bgs)	Top of Bedrock (feet bgs)	Ground Elevation (feet amsl)	MP Elevation (feet amsl)	Top of Screen (feet amsl)	Bottom of Screen (feet amsl)	Top of Bedrock (feet amsl)
PZ-001	7/16/2013	1-inch PVC	Overburden	-	5.5	15.5	8.19	18.19	16	NE	620.43	623.12	614.93	604.93	NE
PZ-002	7/16/2013	1-inch PVC	Overburden	-	4	14	6.74	16.74	14	NE	620.11	622.85	616.11	606.11	NE
PZ-003	7/17/2013	1-inch PVC	Overburden	-	4	14	7.07	17.07	15	NE	615.32	618.39	611.32	601.32	NE
PZ-004	7/17/2013	1-inch PVC	Overburden	-	6	16	8.37	18.37	19	NE	619.11	621.48	613.11	603.11	NE
PZ-005	7/19/2013	1-inch PVC	Overburden	-	6.5	11.5	8.8	13.8	12	NE	612.88	615.18	606.38	601.38	NE
PZ-006	7/18/2013	1-inch PVC	Overburden	-	7	12	10.05	15.05	12.5	NE	617.25	620.30	610.25	605.25	NE
PZ-007	7/17/2013	1-inch PVC	Overburden	-	3	13	5.43	15.43	14.5	NE	618.12	620.55	615.12	605.12	NE
PZ-009	7/18/2013	1-inch PVC	Overburden	-	7.8	12.8	10.1	15.1	13.5	NE	617.59	619.89	609.79	604.79	NE
PZ-010	7/18/2013	1-inch PVC	Overburden	-	3.9	13.9	6.38	16.38	14	NE	617.56	620.04	613.66	603.66	NE
PZ-011	7/16/2013	1-inch PVC	Overburden	-	4	14	6.61	16.61	24.5	NE	619.94	622.55	615.94	605.94	NE
PZ-014	7/18/2013	1-inch PVC	Overburden	-	7.5	12.5	10.65	15.65	13	NE	614.24	617.39	606.74	601.74	NE
PZ-015	7/22/2013	1-inch PVC	Overburden	-	3	8	6	11	8.5	NE	600.39	NS	597.39	592.39	NE
PZ-019	7/23/2013	1-inch PVC	Overburden	-	4	14	7.54	17.54	20	NE	618.40	621.94	614.40	604.40	NE
PZ-022	7/23/2013	1-inch PVC	Overburden	-	4	14	6.74	16.74	17.5	NE	617.18	619.92	613.18	603.18	NE
PR79-MW-001	5/5/2020	2-inch PVC	Overburden	-	20.6	30.6	23.29	33.29	None	31	620.10	622.79	599.50	589.50	589.10
PR79-MW-002	5/5/2020	2-inch PVC	Overburden	-	17	27	19.04	29.04	None	27	618.83	620.87	601.83	591.83	591.83
PR79-MW-003	5/1/2020	2-inch PVC	Overburden	-	23	33	25.85	35.85	None	33	617.65	620.50	594.65	584.65	584.65
PR79-MW-004	5/5/2020	2-inch PVC	Overburden	-	4	14	5.92	15.92	None	14	615.93	617.85	611.93	601.93	601.93
PR79-MW-005	5/6/2020	2-inch PVC	Overburden	-	2	10.8	4.24	13.04	None	11	596.80	599.04	594.80	586.00	585.80
PR79-MW-006	5/7/2020	2-inch PVC	Overburden	-	2	11	3.3	12.3	None	11	596.26	597.56	594.26	585.26	585.26
PR79-MW-007	5/8/2020	2-inch PVC	Overburden	-	2	10	3.61	11.61	None	10	580.78	582.39	578.78	570.78	570.78
PR79-MW-008	5/11/2020	2-inch PVC	Overburden	-	4	14	5.96	15.96	None	15	482.16	484.12	478.16	468.16	467.16
PR79-BR-001	5/21/2020	5-inch borehole with Water FLUTe MLS Ports	Bedrock	Port 1	28	38	31.62	41.62	None	10	614.44	618.06	586.44	576.44	604.44
				Port 2	51	56	54.62	59.62					563.44	558.44	
				Port 3	100	105	103.62	108.62					514.44	509.44	
PR79-BR-002	5/28/2020	5-inch borehole with Water FLUTe MLS Ports	Bedrock	Port 1	31.9	41.9	35.43	45.43	None	27	618.95	622.48	587.05	577.05	591.95
				Port 2	61.9	66.9	65.43	70.43					557.05	552.05	
				Port 3	76.9	81.9	80.43	85.43					542.05	537.05	
				Port 4	89.9	94.9	93.43	98.43					529.05	524.05	
				Port 5	266.9	271.9	270.43	275.43					352.05	347.05	
PR79-BR-003	6/5/2020	5-inch borehole with Water FLUTe MLS Ports	Bedrock	Port 1	13.9	23.9	17.66	27.66	None	10	606.77	610.53	592.87	582.87	596.77
				Port 2	48.9	53.9	52.66	57.66					557.87	552.87	
				Port 3	69.9	74.9	73.66	78.66					536.87	531.87	
				Port 4	281.9	286.9	285.66	290.66					324.87	319.87	
PR79-BR-004	6/2/2020	5-inch borehole with Water FLUTe MLS Port	Bedrock	Port 1	15.7	25.7	18.45	28.45	None	10	590.57	593.32	574.87	564.87	580.57
PR79-BR-005	6/11/2020	5-inch borehole with Water FLUTe MLS Ports	Bedrock	Port 1	27.9	32.9	31.82	36.82	None	12	596.79	600.71	568.89	563.89	584.79
				Port 2	46.9	51.9	50.82	55.82					549.89	544.89	
				Port 3	87.9	92.9	91.82	96.82					508.89	503.89	
				Port 4	214.9	219.9	218.82	223.82					381.89	376.89	

Notes:
amsl - Above mean sea level.
bgs - Below ground surface.
bmp - Below measuring point.
MLS - Multilevel Sample
MP - Measuring point. Measuring point elevation taken on overburden wells from the highest point on the PVC well riser (where marked) with J- plug removed. Measuring point elevation taken on FLUTe wells from the highest point on the brass rim (where marked).
NE - Not encountered.
NS - No survey data available.
PVC - Polyvinyl chloride.
1. Shading indicates an abandoned peizometer.
2. Monitoring wells (identifed as MWs) installed by rotosonic drilling in 2020 (AECOM, 2020).
3. Peizometers (identified as PZs) installed by direct push drilling using pre-pack well screens in July 2013 (AMEC, 2014a).

TABLE A-5
Summary of Overburden Groundwater Elevation Data
Former NIKE PR-79 Control Area
Foster, Rhode Island

Location	Date (mm/dd/yyyy)	Time (hh:mm)	MP Elevation (feet amsl)	Depth to Water from top of MP (feet)	Groundwater Elevation (feet amsl)
PR79-MW-001	5/15/2020	1305	622.79	7.25	615.54
	6/9/2020	1320		12.78	610.01
	6/26/2020	0830		13.80	608.99
	7/6/2020	1310		12.35	610.44
	11/16/2020	1200		20.58	602.21
	11/17/2020	1403		20.59	602.20
PR79-MW-002	5/15/2020	1015	620.87	4.50	616.37
	6/26/2020	0835		13.20	607.67
	7/6/2020	1300		11.89	608.98
	11/16/2020	1155		19.50	601.37
	11/17/2020	1405		19.55	601.32
PR79-MW-003	5/15/2020	0915	620.50	10.00	610.50
	6/26/2020	0833		14.87	605.63
	7/6/2020	1305		12.49	608.01
	11/16/2020	1130		21.18	599.32
	11/17/2020	1407		21.21	599.29
PR79-MW-004	5/15/2020	1312	617.85	8.94	608.91
	6/10/2020	1310		10.56	607.29
	6/26/2020	0845		15.16	602.69
	7/6/2020	1315		13.97	603.88
	11/17/2020	1411		16.27	601.58
	11/23/2020	1035		16.03	601.82
	11/30/2020	0750		16.28	601.57
	12/2/2020	1230		16.25	601.60
	2/12/2021	0900		Dry	Dry
PR79-MW-005	5/15/2020	1318	599.04	7.78	591.26
	6/12/2020	1245		9.34	589.70
	6/15/2020	0915		11.72	587.32
	6/26/2020	0850		12.32	586.72
	7/6/2020	1255		10.50	588.54
	11/17/2020	1402		Dry	Dry
	11/23/2020	1100		12.10	586.94
	11/23/2020	1330		11.13	587.91

TABLE A-5
Summary of Overburden Groundwater Elevation Data
Former NIKE PR-79 Control Area
Foster, Rhode Island

Location	Date (mm/dd/yyyy)	Time (hh:mm)	MP Elevation (feet amsl)	Depth to Water from top of MP (feet)	Groundwater Elevation (feet amsl)
PR79-MW-006	5/15/2020	1325	597.56	5.52	592.04
	6/11/2020	1310		7.14	590.42
	6/15/2020	0820		4.31	593.25
	6/26/2020	0855		11.70	585.86
	7/6/2020	1245		8.14	589.42
	11/17/2020	1140		7.51	590.05
	11/17/2020	1400		7.56	590.00
	11/23/2020	0800		8.65	588.91
PR79-MW-007	5/15/2020	1331	582.39	8.76	573.63
	6/26/2020	0856		11.30	571.09
	7/6/2020	1250		Dry	Dry
	11/17/2020	1357		Dry	Dry
	11/23/2020	1110		Dry	Dry
	11/30/2020	0801		6.16	576.23
	12/1/2020	0800		5.85	576.54
	12/1/2020	1249		5.85	576.54
	2/11/2021	1100		10.80	571.59
PR79-MW-008	5/15/2020	1345	484.12	Dry	Dry
	6/26/2020	0900		Dry	Dry
	7/6/2020	1330		Dry	Dry
	11/17/2020	1408		Dry	Dry
	12/1/2020	1045		Dry	Dry
	12/3/2020	0740		Dry	Dry
	12/8/2020	0855		Dry	Dry
	2/12/2021	0830		Dry	Dry
PR79-PZ-001	7/8/2019	1405	623.12	14.07	609.05
	6/15/2020	0915		10.34	612.78
	11/17/2020	1000		18.02	605.10
	11/17/2020	1402		Dry	Dry
	11/18/2020	0800		Dry	Dry
	11/19/2020	0800		Dry	Dry
	11/30/2020	0754		Dry	Dry
	12/2/2020	0800		Dry	Dry
	12/3/2020	0800		Dry	Dry
	12/8/2020	0930		Dry	Dry
	2/10/2021	0801		10.55	612.57
	2/10/2021	1245		10.55	612.57

TABLE A-5
Summary of Overburden Groundwater Elevation Data
Former NIKE PR-79 Control Area
Foster, Rhode Island

Location	Date (mm/dd/yyyy)	Time (hh:mm)	MP Elevation (feet amsl)	Depth to Water from top of MP (feet)	Groundwater Elevation (feet amsl)
PR79-PZ-002	7/8/2019	1400	622.85	13.02	609.83
PR79-PZ-003	7/8/2019	1356	618.39	13.42	604.97
PR79-PZ-004	7/8/2019	1352	621.48	15.14	606.34
PR79-PZ-005	7/8/2019	1422	615.18	14.76	600.42
	6/15/2020	0925		9.49	605.69
	11/17/2020	1413		13.31	601.87
	11/23/2020	1037		13.30	601.88
	11/30/2020	0752		13.51	601.67
	12/2/2020	1328		14.09	601.09
	12/10/2021	0833		9.14	606.04
	2/12/2021	1120		9.26	605.92
PR79-PZ-006	7/8/2019	1419	620.30	12.54	607.76
PR79-PZ-007	7/8/2019	1413	620.55	10.74	609.81
	6/12/2020	1255		7.62	612.93
	6/15/2020	0925		11.26	609.29
	11/17/2020	1025		14.93	605.62
	11/17/2020	1405		Dry	Dry
	11/30/2020	0744		14.91	605.64
	12/3/2020	0745		Dry	Dry
	12/8/2020	0730		7.42	613.13
PR79-PZ-009	7/8/2019	1439	619.89	9.36	610.53
PR79-PZ-010	7/8/2019	1437	620.04	10.68	609.36
	6/15/2020	0920		7.36	612.68
	11/17/2020	0930		Dry	Dry
	11/17/2020	1409		Dry	Dry
	11/18/2020	0800		Dry	Dry
	11/19/2020	0800		Dry	Dry
	11/23/2020	1030		16.00	604.04
	11/30/2020	0746		16.00	604.04
	12/2/2020	0800		Dry	Dry
	12/2/2020	1405		16.00	604.04
	2/10/2021	0815		8.25	611.79
	2/11/2021	1215		8.19	611.85

TABLE A-5
Summary of Overburden Groundwater Elevation Data
Former NIKE PR-79 Control Area
Foster, Rhode Island

Location	Date (mm/dd/yyyy)	Time (hh:mm)	MP Elevation (feet amsl)	Depth to Water from top of MP (feet)	Groundwater Elevation (feet amsl)
PR79-PZ-011	7/8/2019	1530	622.55	11.54	611.01
PR79-PZ-014	7/8/2019	1429	617.39	12.48	604.91
	6/15/2020	1400		8.30	609.09
	11/17/2020	1050		15.09	602.30
	11/17/2020	1409		15.12	602.27
	11/23/2020	1040		15.13	602.26
	11/30/2020	0748		15.12	602.27
	12/2/2020	1330		15.13	602.26
	12/10/2021	0822		8.64	608.75
	2/12/2021	0915		8.71	608.68
PR79-PZ-015	7/8/2019	1347	NS	9.98	NS
PR79-PZ-019	7/8/2019	1433	621.94	8.26	613.68
PR79-PZ-022	7/8/2019	1415	619.92	12.75	607.17
PR79-STATION-001	11/17/2020	1450	380.41	0.88	376.29
	12/21/2020	1033		1.00	376.41
	12/22/2020	1200		0.95	376.36
PR79-STATION-002	5/11/2020	1300	377.32	1.50	373.82
	11/17/2020	1453		1.13	373.45
	12/21/2020	1041		1.35	373.67
	12/22/2020	1215		1.36	373.68
PR79-WL-001	12/4/2020	1140	421.17	15.88	405.29
PR79-WL-002	12/4/2020	1040	NS	NM	NS
PR79-WL-003	12/3/2020	1425	NS	3.30	NS

Notes:

amsl - Above mean sea level.

MP - Measuring point. Measuring point elevation taken on overburden wells from the highest point on the PVC well riser (where marked) with J- plug removed. Measuring points elevation on stream gauges is at the 5.00 ft mark.

NS - No survey data available.

NM - Not measured to avoid potentially contaminating a water supply well.

1. Shading indicates an abandoned peizometer.

TABLE A-6
Summary of Bedrock Groundwater Elevation Data
Former NIKE PR-79 Control Area
Foster, Rhode Island

Location	Port Interval (ft bgs)	Date (mm/dd/yyyy)	Time (hh:mm)	MP Elevation (feet amsl)	Depth to Water Below MP (feet)	Groundwater Elevation (feet amsl)
PR79-BR-001	28-38	12/14/2020	1050	618.06	18.00	600.06
	51-56				21.30	596.76
	100-105				25.00	593.06
PR79-BR-002	31.9-41.9	12/15/2020	0730	622.48	18.81	603.67
	61.9-66.9				20.34	602.14
	76.9-81.9				26.50	595.98
	89.9-94.9				26.82	595.66
	266.9-271.9				29.38	593.10
	31.9-41.9	2/10/2021	0815		NM	NM
	61.9-66.9				NM	NM
	76.9-81.9				NM	NM
	89.9-94.9				NM	NM
	266.9-271.9				27.71	594.77
PR79-BR-003	13.9-23.9	12/15/2020	1240	610.53	11.49	599.04
	48.9-53.9				16.35	594.18
	69.9-74.9				17.45	593.08
	281.9-286.9				17.30	593.23
	13.9-23.9	2/11/2021	0820		16.00	594.53
	48.9-53.9				15.00	595.53
	69.9-74.9				14.60	595.93
	281.9-286.9				11.75	598.78
PR79-BR-004	15.7-25.7	12/15/2020	1326	593.32	12.34	580.98
PR79-BR-005	27.9-32.9	12/15/2020	1301	600.71	14.12	586.59
	46.9-51.9				14.95	585.76
	87.9-92.9				26.20	574.51
	214.9-219.9				27.84	572.87
	27.9-32.9	2/11/2021	0950		NM	NM
	46.9-51.9				NM	NM
	87.9-92.9				NM	NM
	214.9-219.9				NM	NM
NIKE-1		11/30/2020	1050	606.97	61.04	545.93
		12/11/2020	1020		22.63	584.34
NIKE-2		11/30/2020	0900	601.87	18.50	583.37
		12/11/2020	1043		14.58	587.29
ROU-1		12/1/2020	0945	607.39	32.01	575.38
		12/11/2020	1114		14.25	593.14
ROU-2		12/1/2020	1005	561.04	78.21	482.83
ROU-3		12/1/2020	1140	576.68	79.86	496.82

Notes:

amsl - Above mean sea level

MP - Measuring point. Measuring point elevation taken on FLUTe wells from the highest point on the brass rim (where marked).

NM - Not measured due to ice obstructing the liner.

Table A-7
Summary of Water Quality Parameters
Multiple Events
D01RI0063-02, Nike PR-79 (AECOM)

Location ID	Depth (Feet BGS)	Sample Date	YDO mg/L	YORP mv	YPH pH Units	YSC µS/cm	YTEMP °C	YTURB NTU	Fe^{2+} mg/L
PR79-BR-001	100.00 - 105.00	12-15-2020 08:21	1.34	194.8	6.78	159	9.78	0.02	0.00
	51.00 - 56.00	12-15-2020 08:12	6.21	191.4	6.75	150	8.96	0.02	0.00
	28.00 - 38.00	12-15-2020 07:57	5.3	167.1	7.03	173	9.56	0.02	0.00
PR79-BR-002	266.90 - 271.90	12-18-2020 09:17	1.47	208.2	6.94	117	9.55	0.02	0.14
	76.90 - 81.90	12-18-2020 09:13	6.2	138.2	7.94	123	9.65	0.02	0.00
	89.90 - 94.90	12-18-2020 09:10	2.74	217.6	6.91	112	9.77	0.02	0.00
	31.90 - 41.90	12-18-2020 08:50	8.33	209.3	6.91	96	9.85	0.02	0.00
	61.90 - 66.90	12-18-2020 08:50	7.55	123.9	8.19	122	9.79	0.02	0.11
PR79-BR-003	281.90 - 286.90	12-21-2020 08:55	0.54	33.2	7.06	248	10.09	2.98	0.16
	69.90 - 74.90	12-21-2020 08:45	1.1	193.1	6.61	115	9.78	0.26	0.00
	48.90 - 53.90	12-21-2020 08:20	3.92	194.8	6.49	90	10.05	6.02	0.00
	13.90 - 23.90	12-21-2020 08:01	4.13	354.5	7.65	78	9.85	0.02	0.00
PR79-BR-004	15.70 - 25.70	12-16-2020 10:52	5.08	189.6	10.67	235	10.2	0.02	0.00
PR79-BR-005	214.90 - 219.90	12-21-2020 11:15	0.32	128.9	7.18	303	10.54	0.02	0.03
	87.90 - 92.90	12-21-2020 11:09	0.45	170.6	6.04	200	10.58	2.34	0.00
	46.90 - 51.90	12-21-2020 11:01	0.7	174.3	6.09	213	10.51	0.64	0.00
	27.90 - 32.90	12-21-2020 10:52	2.21	168.2	6.34	191	10.35	0.26	0.00
PR79-MW-001	45.00 - 50.00	11-16-2020 13:55	9.6	190	8.51	113	11.32	57.2	0.00
PR79-MW-002	45.00 - 50.00	11-16-2020 13:20	0.54	-22.6	5.74	163	11.03	23.8	0.36
PR79-MW-003	25.00 - 30.00	11-16-2020 12:57	5.81	60.4	7.16	128	11.42	0.02	0.02
PR79-MW-005	35.00 - 40.00	12-23-2020 15:00	7.56	329	5.99	65	12.33	63.3	0.13
PR79-MW-006	35.00 - 40.00	11-17-2020 12:35	5.25	293.6	5.98	499	14.07	2.86	0.01
PR79-MW-007	10.00 - 15.00	12-01-2020 13:38	5.25	354.4	4.82	43	11.22	0.02	Dry
PR79-WL-001	16.88 - 18.15	12-04-2020 12:15	6.65	303	6.47	46	11.75	0.02	0.02
PR79-WL-002	3.30 - 9.80	12-04-2020 11:00	7.02	90	6.68	131	10.88	0.02	0.00
PR79-WL-003	3.30 - 9.80	12-03-2020 15:00	0.9	322.7	7	60	9.93	0.02	--
PR79-WT-001	0.00 - 0.50	05-04-2020 02:20	7.51	210.1	4.33	56	12.89	8.02	--
	0.00 - 1.00	05-04-2020 02:17	8.1	206.1	4.52	69	12.53	136	--

Table A-7
Summary of Water Quality Parameters
Multiple Events
D01RI0063-02, Nike PR-79 (AECOM)

Location ID	Depth (Feet BGS)	Sample Date	YDO mg/L	YORP mv	YPH pH Units	YSC µS/cm	YTEMP °C	YTURB NTU	Fe^{2+} mg/L
PR79-WT-004	0.00 - 1.00	05-08-2020 11:20	7.77	218.2	5.88	58	12.76	136	--
		05-08-2020 10:05	7.63	209.4	7.4	118	12.28	301	--
PR79-WT-005	0.00 - 0.25	05-05-2020 02:00	8.19	82.9	5.66	80	15.08	0.02	--
	0.00 - 1.00	05-05-2020 01:35	1.17	-2.3	5.45	79	15.34	0.37	--
PR79-WT-006	0.00 - 0.50	05-05-2020 12:42	9.13	154.8	5.71	80	14.62	0.78	--
	0.00 - 1.00	05-05-2020 12:39	2.6	154.6	5.71	76	14.01	0.02	--
PR79-WT-007	0.00 - 1.00	05-21-2020 03:30	6.03	103.7	5.35	78	20.81	1.74	--
	0.00 - 0.04	05-21-2020 02:53	3.36	159.3	4.89	69	19.42	2.63	--
PR79-WT-009	0.00 - 1.00	05-19-2020 09:45	8.39	175.3	6.06	33	12.26	0.02	--
	0.00 - 0.58	05-14-2020 02:21	6.36	225.3	5.63	46	16.74	2.78	--
									--

BGS = below ground surface

Analysis Type

Fe^{2+}	HACH Ferous Iron
YDO	YSI Dissolved Oxygen
YORP	YSI Oxidation Reduction Potential
YPH	YSI pH
YSC	YSI Specific Conductivity
YTEMP	YSI Temperature
YTURB	YSI Turbidity

Units

°C	Degrees Celsius
µS/cm	Microsiemens per Centimeter
mg/L	Milligrams per Liter
mv	Millivolts
NTU	Nephelometric Turbidity Units
pH Units	pH Units

Table A-8
Summary of Detected Analytical Results in Overburden Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
DISSOLVEDGAS (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Ethane	Aqueous			5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Ethene	Aqueous			5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Methane	Aqueous			10.0 U	10.0 U	5.00 U	5.00 U		5.00 U	**3.30 J**	5.00 U	**23.0**
GENCHEM (MG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Aqueous			0.800 U	0.800 U	0.800 U	0.800 U		0.800 U	0.800 U	0.800 U	0.800 U
Total Organic Carbon	Aqueous			1.00 U	1.00 U	0.500 U	0.500 U		**1.90 J**	**0.700 J**	**1.60**	**0.380 J**
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Alkalinity, Total (as CaCO3)	Aqueous			**67000**	**67000**	**67000**	**56000**		**29000**	**8300**	**15000**	**7200 J**
Chloride	Aqueous			**1900 J**	**1900 J**	**2800**	**1600 J**		**3400**	**140000 J**	**6600**	**4200**
Nitrate (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3200	**190**	**210**	**61.0**	**290**		**440**	**490**	**73.0 J**	**2400**
Nitrite (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	**57.0**	**72.0**	**10.0 J**	25.0 U		25.0 U	**210 J**	**13.0 J**	**60.0**
Sulfate	Aqueous			**5000**	**5300**	**5600**	**9000**		**6800**	**8700 J**	**2500**	**6500**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U	0.100 U		0.100 U	0.100 U	0.100 U	**0.0130 J**
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U	0.100 U		0.100 U	0.100	0.100 U	0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	**717**	**831**	**281 J**	**40.0 J**		**3070**	**110 J**	100 U	**24.0 J**
Antimony	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U	0.500 U	**0.120 J**	0.500 U
Arsenic	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	**2.40 J**	**2.60 J**	4.00 U	4.00 U		4.00 U	4.00 U	4.00 U	4.00 U
Barium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**12.6**	**12.4**	**13.9**	5.00 U		**44.0**	**182**	**32.7**	**19.9**
Beryllium	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	**0.0370 J**	**0.0560 J**	0.200 U	0.200 U		**0.130 J**	0.200 U	0.200 U	0.200 U
Cadmium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U	1.00 U	0.200 U	0.200 U
Calcium	Aqueous			**6260**	**6340**	**19200**	**11600**		**6760**	**6610**	**5960**	**5620 J**
Chromium	Aqueous	USEPA MCL March 2018	100	**0.890 J**	**0.850 J**	**0.500 J**	**0.670 J**		**4.06 J**	4.00 U	4.00 U	4.00 U
Cobalt	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.260 J**	**0.330 J**	**0.420 J**	**1.10**		**1.14**	**3.04**	**0.330 J**	0.300 U
Copper	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**1.30 J**	**1.60 J**	**1.00 J**	10.0 U		**2.80 J**	**1.30 J**	10.0 U	**1.50 J**
Iron	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**564**	**616**	**707**	**33.0 J**		**2710**	**105**	80.0 U	**146**
Lead	Aqueous	USEPA MCL March 2018	15	0.500 U	0.500 U	0.500 U	0.500 U		**1.29**	0.500 U	**0.0940 J**	1.00 U
Magnesium	Aqueous			**806**	**840**	**1860**	**2590**		**2560**	**1180**	**351**	**586**
Manganese	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**29.6**	**31.3**	**380**	**14.2**		**230**	**41.5**	**13.3**	**11.0**
Nickel	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**0.450 J**	**0.490 J**	**0.360 J**	**0.220 J**		2.00 U	**3.99**	**1.00 J**	1.20 U
Potassium	Aqueous			**3460**	**3580**	**3380**	**3230**		**6180**	**4640**	**1790**	**1580**
Selenium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	3.00 U	**0.190 J**	3.00 U	**0.260 J**		**0.270 J**	3.00 U	**0.190 J**	**0.320 J**
Silver	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U	0.400 U	0.400 U	0.400 U
Sodium	Aqueous			**23700**	**23900**	**8420**	**11200**		**6650**	**87100**	**4060**	**4920**
Thallium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400 U	0.400 U		**0.150 J**	0.400 U	0.400 U	0.400 U

Table A-8
Summary of Detected Analytical Results in Overburden Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
Vanadium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**4.71 J**	**4.88 J**	**0.840 J**	**1.50 J**		**4.52 J**	**0.300 J**	4.00 U	**0.280 J**
Zinc	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**1.20 J**	**2.10 J**	**2.00 J**	10.0 U		10.0 U	**10.7 J**	**2.60 J**	20.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	**39.0 J**	**40.0 J**	100 U	**22.0 J**		**427**	**57.0 J**	100 U	100 U
Antimony, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	0.500 U	0.500 U	0.500 U	0.500 U		0.500	0.500 U	**0.0710 J**	0.500 U
Arsenic, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	**2.60 J**	**2.50 J**	4.00 U	4.00 U		4.00 U	4.00 U	4.00 U	4.00 U
Barium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	5.00 U	5.00 U	**10.6**	5.00 U		**16.2**	**194**	**36.2**	**18.5**
Beryllium, Dissolved	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U	**0.0360 J**	0.200 U	0.200 U
Cadmium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U	1.00 U	0.200 U	0.200 U
Calcium, Dissolved	Aqueous			**5850**	**6020**	**17800**	**10200**		**6160**	**6780**	**6280**	**5330 J**
Chromium, Dissolved	Aqueous	USEPA MCL March 2018	100	4.00 U	4.00 U	**0.430 J**	**0.650 J**		**0.650 J**	4.00 U	4.00 U	4.00 U
Cobalt, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.0780 J**	**0.0670 J**	**0.290 J**	**1.12**		**0.370 J**	**3.14**	**0.150 J**	0.300 U
Copper, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**0.980 J**	**1.40 J**	**0.660 J**	10.0 U		**0.880 J**	**2.40 J**	10.0 U	**1.50 J**
Iron, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**25.0 J**	**19.0 J**	**518**	80.0 U		**346**	**35.0 J**	80.0 U	80.0 U
Lead, Dissolved	Aqueous	USEPA MCL March 2018	15	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U	0.500 U	**0.0790 J**	0.500 U
Magnesium, Dissolved	Aqueous			**675**	**672**	**1760**	**2540**		**1600**	**1180**	**384**	**554**
Manganese, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**18.1**	**17.2**	**434**	**7.90**		**156 J**	**44.2**	**14.2**	**11.0**
Nickel, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**0.420 J**	**0.550 J**	**0.600 J**	**0.450 J**		1.20 U	**4.27**	**0.870 J**	1.20 U
Potassium, Dissolved	Aqueous			**3110**	**3200**	**3180**	**2720**		**3190**	**4700**	**1890**	**1470**
Selenium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	3.00 U	3.00 U	3.00 U	**0.240 J**		3.00 U	3.00 U	3.00 U	**0.280 J**
Silver, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U	0.400 U	0.400 U	0.400 U
Sodium, Dissolved	Aqueous			**23400**	**23800**	**7920**	**9630**		**4250**	**89600**	**4290**	**4690**
Thallium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U	0.400 U	0.400 U	0.400
Vanadium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**4.21 J**	**3.97 J**	**0.290 J**	**1.40 J**		**0.560 J**	4.00 U	4.00 U	4.00 U
Zinc, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**1.00 J**	**1.30 J**	**2.00 J**	**0.850 J**		10.0	**5.30 J**	**6.30 J**	20.0 U
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	0.170 U	0.170 U	0.180 U	0.170 U		0.170 U	0.170 U	0.170 U	0.170 UJ
2-Methylnaphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 UJ	0.0930 UJ
Acenaphthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	53	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Acenaphthylene	Aqueous	Tapwater RSLs Alternate Compound Selection	53	0.0930 UJ	0.0930 UJ	0.100 UJ	0.0930 UJ		0.0950 U	0.0930 UJ	0.0940 U	0.0930 UJ
Anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	180	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(a)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.03	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(a)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 UJ	0.0930 U	0.0940 U	0.0930 UJ
Benzo(b)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(g,h,i)perylene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(k)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.5	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ

Table A-8
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2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
Chrysene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	25	0.0930 U	0.0930 U	0.100 U	**0.0380 J**		0.0950 U	0.0930 U	0.0940 U	**0.0360 J**
Dibenz(a,h)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Fluorene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	29	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Naphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.17	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Pentachlorophenol	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.041	0.470 U	0.470 U	0.500 U	0.470 U		0.480 U	0.470 U		0.470 UJ
Phenanthrene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	12	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Aqueous	USEPA MCL March 2018	200	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.8	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethene	Aqueous	USEPA MCL March 2018	7	0.500 U	0.500 U	0.500 UJ	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.7	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.500 U	0.0250 UJ	0.0250 UJ	0.0250 U	0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.4	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.500 U	0.0250 UJ	0.0250 UJ	0.0250 U	0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	5.6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2-Dichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	30	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM Method 1 Groundwater Objective (GA)	600	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
2-Butanone (MEK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	560	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	630	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
Acetone	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	2.50 U	2.50 U	2.50 UJ	2.50 U	**5.00**	2.50 U	2.50 UJ	2.50 U	2.50 U
Benzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	0.0250 U	0.0250 U	0.0250 UJ	0.0250 UJ	0.500 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U
Bromodichloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.13	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Bromomethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.75	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	81	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 UJ
Chloroform	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.22	**0.0660 J**	**0.0650 J**	**0.0300 J**	0.0250 UJ	0.500 U	**0.0440 J**	0.0250 UJ	0.0250 U	0.0250 U
Chloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Dibromochloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.87	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Ethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1.5	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	45	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
m,p-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	Aqueous	USEPA MCL March 2018	5	2.50 U	2.50 U	2.50 UJ	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U

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D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
n-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	100	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
n-Propylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	66	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
o-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	Tapwater RSLs Alternate Compound Selection	45	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
sec-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selection	200	5.00 U	5.00 U	5.00 UJ	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
tert-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	69	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Toluene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	110	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	36	0.500 U	0.500 U	0.500 UJ	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Trichloroethene (TCE)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.28	0.0250 U	0.0250 U	0.0250 UJ	**33.0 J**	0.500 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U
Vinyl chloride	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.019	0.0500 U	0.0500 U	0.0500 UJ	0.0500 UJ	1.00 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

Table A-8
Summary of Detected Analytical Results in Overburden Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
DISSOLVEDGAS (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Ethane	Aqueous			5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Ethene	Aqueous			5.00 U	5.00 U	5.00 U	5.00 U		5.00 U	5.00 U	5.00 U	5.00 U
Methane	Aqueous			10.0 U	10.0 U	5.00 U	5.00 U		5.00 U	**3.30 J**	5.00 U	**23.0**
GENCHEM (MG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Aqueous			0.800 U	0.800 U	0.800 U	0.800 U		0.800 U	0.800 U	0.800 U	0.800 U
Total Organic Carbon	Aqueous			1.00 U	1.00 U	0.500 U	0.500 U		**1.90 J**	**0.700 J**	**1.60**	**0.380 J**
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Alkalinity, Total (as CaCO3)	Aqueous			**67000**	**67000**	**67000**	**56000**		**29000**	**8300**	**15000**	**7200 J**
Chloride	Aqueous			**1900 J**	**1900 J**	**2800**	**1600 J**		**3400**	**140000 J**	**6600**	**4200**
Nitrate (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3200	**190**	**210**	**61.0**	**290**		**440**	**490**	**73.0 J**	**2400**
Nitrite (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	**57.0**	**72.0**	**10.0 J**	25.0 U		25.0 U	**210 J**	**13.0 J**	**60.0**
Sulfate	Aqueous			**5000**	**5300**	**5600**	**9000**		**6800**	**8700 J**	**2500**	**6500**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U	0.100 U		0.100 U	0.100 U	0.100 U	**0.0130 J**
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U	0.100 U		0.100 U	0.100	0.100 U	0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	**717**	**831**	**281 J**	**40.0 J**		**3070**	**110 J**	100 U	**24.0 J**
Antimony	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U	0.500 U	**0.120 J**	0.500 U
Arsenic	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	**2.40 J**	**2.60 J**	4.00 U	4.00 U		4.00 U	4.00 U	4.00 U	4.00 U
Barium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**12.6**	**12.4**	**13.9**	5.00 U		**44.0**	**182**	**32.7**	**19.9**
Beryllium	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	**0.0370 J**	**0.0560 J**	0.200 U	0.200 U		**0.130 J**	0.200 U	0.200 U	0.200 U
Cadmium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U	1.00 U	0.200 U	0.200 U
Calcium	Aqueous			**6260**	**6340**	**19200**	**11600**		**6760**	**6610**	**5960**	**5620 J**
Chromium	Aqueous	USEPA MCL March 2018	100	**0.890 J**	**0.850 J**	**0.500 J**	**0.670 J**		**4.06 J**	4.00 U	4.00 U	4.00 U
Cobalt	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.260 J**	**0.330 J**	**0.420 J**	**1.10**		**1.14**	**3.04**	**0.330 J**	0.300 U
Copper	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**1.30 J**	**1.60 J**	**1.00 J**	10.0 U		**2.80 J**	**1.30 J**	10.0 U	**1.50 J**
Iron	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**564**	**616**	**707**	**33.0 J**		**2710**	**105**	80.0 U	**146**
Lead	Aqueous	USEPA MCL March 2018	15	0.500 U	0.500 U	0.500 U	0.500 U		**1.29**	0.500 U	**0.0940 J**	1.00 U
Magnesium	Aqueous			**806**	**840**	**1860**	**2590**		**2560**	**1180**	**351**	**586**
Manganese	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**29.6**	**31.3**	**380**	**14.2**		**230**	**41.5**	**13.3**	**11.0**
Nickel	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**0.450 J**	**0.490 J**	**0.360 J**	**0.220 J**		2.00 U	**3.99**	**1.00 J**	1.20 U
Potassium	Aqueous			**3460**	**3580**	**3380**	**3230**		**6180**	**4640**	**1790**	**1580**
Selenium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	3.00 U	**0.190 J**	3.00 U	**0.260 J**		**0.270 J**	3.00 U	**0.190 J**	**0.320 J**
Silver	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U	0.400 U	0.400 U	0.400 U
Sodium	Aqueous			**23700**	**23900**	**8420**	**11200**		**6650**	**87100**	**4060**	**4920**
Thallium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400 U	0.400 U		**0.150 J**	0.400 U	0.400 U	0.400 U

Table A-8
Summary of Detected Analytical Results in Overburden Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
Vanadium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**4.71 J**	**4.88 J**	**0.840 J**	**1.50 J**		**4.52 J**	**0.300 J**	4.00 U	**0.280 J**
Zinc	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**1.20 J**	**2.10 J**	**2.00 J**	10.0 U		10.0 U	**10.7 J**	**2.60 J**	20.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	**39.0 J**	**40.0 J**	100 U	**22.0 J**		**427**	**57.0 J**	100 U	100 U
Antimony, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	0.500 U	0.500 U	0.500 U	0.500 U		0.500	0.500 U	**0.0710 J**	0.500 U
Arsenic, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	**2.60 J**	**2.50 J**	4.00 U	4.00 U		4.00 U	4.00 U	4.00 U	4.00 U
Barium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	5.00 U	5.00 U	**10.6**	5.00 U		**16.2**	**194**	**36.2**	**18.5**
Beryllium, Dissolved	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U	**0.0360 J**	0.200 U	0.200 U
Cadmium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U	1.00 U	0.200 U	0.200 U
Calcium, Dissolved	Aqueous			**5850**	**6020**	**17800**	**10200**		**6160**	**6780**	**6280**	**5330 J**
Chromium, Dissolved	Aqueous	USEPA MCL March 2018	100	4.00 U	4.00 U	**0.430 J**	**0.650 J**		**0.650 J**	4.00 U	4.00 U	4.00 U
Cobalt, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.0780 J**	**0.0670 J**	**0.290 J**	**1.12**		**0.370 J**	**3.14**	**0.150 J**	0.300 U
Copper, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**0.980 J**	**1.40 J**	**0.660 J**	10.0 U		**0.880 J**	**2.40 J**	10.0 U	**1.50 J**
Iron, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**25.0 J**	**19.0 J**	**518**	80.0 U		**346**	**35.0 J**	80.0 U	80.0 U
Lead, Dissolved	Aqueous	USEPA MCL March 2018	15	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U	0.500 U	**0.0790 J**	0.500 U
Magnesium, Dissolved	Aqueous			**675**	**672**	**1760**	**2540**		**1600**	**1180**	**384**	**554**
Manganese, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**18.1**	**17.2**	**434**	**7.90**		**156 J**	**44.2**	**14.2**	**11.0**
Nickel, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**0.420 J**	**0.550 J**	**0.600 J**	**0.450 J**		1.20 U	**4.27**	**0.870 J**	1.20 U
Potassium, Dissolved	Aqueous			**3110**	**3200**	**3180**	**2720**		**3190**	**4700**	**1890**	**1470**
Selenium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	3.00 U	3.00 U	3.00 U	**0.240 J**		3.00 U	3.00 U	3.00 U	**0.280 J**
Silver, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U	0.400 U	0.400 U	0.400 U
Sodium, Dissolved	Aqueous			**23400**	**23800**	**7920**	**9630**		**4250**	**89600**	**4290**	**4690**
Thallium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U	0.400 U	0.400 U	0.400
Vanadium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**4.21 J**	**3.97 J**	**0.290 J**	**1.40 J**		**0.560 J**	4.00 U	4.00 U	4.00 U
Zinc, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**1.00 J**	**1.30 J**	**2.00 J**	**0.850 J**		10.0	**5.30 J**	**6.30 J**	20.0 U
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	0.170 U	0.170 U	0.180 U	0.170 U		0.170 U	0.170 U	0.170 U	0.170 UJ
2-Methylnaphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 UJ	0.0930 UJ
Acenaphthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	53	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Acenaphthylene	Aqueous	Tapwater RSLs Alternate Compound Selection	53	0.0930 UJ	0.0930 UJ	0.100 UJ	0.0930 UJ		0.0950 U	0.0930 UJ	0.0940 U	0.0930 UJ
Anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	180	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(a)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.03	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(a)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 UJ	0.0930 U	0.0940 U	0.0930 UJ
Benzo(b)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(g,h,i)perylene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Benzo(k)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.5	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ

Table A-8
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2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
Chrysene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	25	0.0930 U	0.0930 U	0.100 U	**0.0380 J**		0.0950 U	0.0930 U	0.0940 U	**0.0360 J**
Dibenz(a,h)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Fluorene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	29	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Naphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.17	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Pentachlorophenol	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.041	0.470 U	0.470 U	0.500 U	0.470 U		0.480 U	0.470 U		0.470 UJ
Phenanthrene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
Pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	12	0.0930 U	0.0930 U	0.100 U	0.0930 U		0.0950 U	0.0930 U	0.0940 U	0.0930 UJ
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Aqueous	USEPA MCL March 2018	200	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.8	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethene	Aqueous	USEPA MCL March 2018	7	0.500 U	0.500 U	0.500 UJ	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.7	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.500 U	0.0250 UJ	0.0250 UJ	0.0250 U	0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.4	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.0250 UJ	0.500 U	0.0250 UJ	0.0250 UJ	0.0250 U	0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	5.6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2-Dichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	30	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM Method 1 Groundwater Objective (GA)	600	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
2-Butanone (MEK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	560	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	630	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
Acetone	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	2.50 U	2.50 U	2.50 UJ	2.50 U	**5.00**	2.50 U	2.50 UJ	2.50 U	2.50 U
Benzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	0.0250 U	0.0250 U	0.0250 UJ	0.0250 UJ	0.500 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U
Bromodichloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.13	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Bromomethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.75	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon disulfide	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	81	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 UJ
Chloroform	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.22	**0.0660 J**	**0.0650 J**	**0.0300 J**	0.0250 UJ	0.500 U	**0.0440 J**	0.0250 UJ	0.0250 U	0.0250 U
Chloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Dibromochloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.87	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Ethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1.5	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	45	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
m,p-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene chloride	Aqueous	USEPA MCL March 2018	5	2.50 U	2.50 U	2.50 UJ	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U

Table A-8
Summary of Detected Analytical Results in Overburden Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-MW-001		PR79-MW-002	PR79-MW-003	PR79-MW-004	PR79-MW-005	PR79-MW-006	PR79-MW-007	PR79-WL-001
			Sample ID	PR79-GW-FD01-01 (FD)	PR79-MW-001-01	PR79-MW-002-01	PR79-MW-003-01	PR79-MW-004-01	PR79-MW-005-01	PR79-MW-006-01	PR79-MW-007-01	PR79-WL-001-01
			Sampling Date	16-Nov-20	16-Nov-20	16-Nov-20	16-Nov-20	02-Dec-20	23-Nov-20	17-Nov-20	01-Dec-20	04-Dec-20
n-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	100	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
n-Propylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	66	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
o-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	Tapwater RSLs Alternate Compound Selection	45	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
sec-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selection	200	5.00 U	5.00 U	5.00 UJ	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
tert-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	69	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Toluene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	110	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	36	0.500 U	0.500 U	0.500 UJ	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Trichloroethene (TCE)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.28	0.0250 U	0.0250 U	0.0250 UJ	**33.0 J**	0.500 U	0.0250 U	0.0250 U	0.0250 U	0.0250 U
Vinyl chloride	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.019	0.0500 U	0.0500 U	0.0500 UJ	0.0500 UJ	1.00 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-001				PR79-BR-002				
			Sample ID	PR79-BR-001-P1-01	PR79-BR-001-P2-01	PR79-BR-001-P3-01	PR79-GW-FD03-01 (FD)	PR79-BR-002-P1-01	PR79-BR-002-P1-01-R	PR79-BR-002-P2-01	PR79-BR-002-P2-01-R	PR79-BR-002-P3-01
			Sampling Date	15-Dec-20	15-Dec-20	15-Dec-20	15-Dec-20	18-Dec-20	10-Feb-21	18-Dec-20	10-Feb-21	18-Dec-20
DISSOLVEDGAS (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Ethane	Aqueous			5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		5.00 U
Ethene	Aqueous			5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		5.00 U
Methane	Aqueous			10.0 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		5.00 U
GENCHEM (MG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Aqueous			0.800 U	0.800 U	0.800 U	0.800 U	0.800 U		0.800 U		0.800 U
Total Organic Carbon	Aqueous			1.00 U	1.00 U	**2.30**	1.00 U	1.00 U		1.00 U		1.00 U
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Alkalinity, Total (as CaCO3)	Aqueous			**57000**	**60000**	**62000**	**58000**	**43000**		**48000**		**46000**
Chloride	Aqueous			**2400**	**2500**	**3200**	**2500**	**3100**		**3100**		**3300**
Nitrate (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3200	**130 J**	**140 J**	**73.0 J**	**140 J**	**65.0 J**		**240 J**		**250 J**
Nitrite (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	25.0 U	25.0 U	25.0 U	25.0 U	**14.0 J**		**13.0 J**		**14.0 J**
Sulfate	Aqueous			**28000**	**19000**	**20000**	**28000**	**6600**		**9900**		**9900**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U		0.100 U		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U	0.100 U	0.100		0.100		0.100
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	100 U	100 U	100 U	100 U	100 U		100 U		100 U
Antimony	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	1.00 U	0.500 U	1.00 U	1.00 U	**0.260 J**		**0.240 J**		**0.220 J**
Arsenic	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**8.48**	5.00 U	**10.1**	**11.5**	**3.24 J**		**2.81 J**		**2.33 J**
Beryllium	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U	0.200 U	0.200 U	**0.0370 J**		**0.0720 J**		0.200 U
Cadmium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U	0.200 U	**0.0340 J**		**0.0300 J**		0.200 U
Calcium	Aqueous			**18100**	**16600**	**19200**	**20500**	**9490**		**13200**		**11900**
Chromium	Aqueous	USEPA MCL March 2018	100	**0.470 J**	**0.460 J**	4.00 U	4.00 U	4.00 U		**0.970 J**		**0.710 J**
Cobalt	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	0.300 U	0.300 U	0.300 U	0.300 U	**0.120 J**		**0.0980 J**		**0.0620 J**
Copper	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	10.0 U	10.0 U	10.0 U	10.0 U	**3.60 J**		**6.20 J**		**4.30 J**
Iron	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U		80.0 U		80.0 U
Lead	Aqueous	USEPA MCL March 2018	15	**6.62**	**3.21**	**5.04**	**6.43**	**1.90**		**3.24**		**1.73**
Magnesium	Aqueous			**4040**	**3430**	**3340**	**4000**	**1500**		**1980**		**1810**
Manganese	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**23.7**	**3.50 J**	**68.8**	**23.3**	**16.1**		**5.30**		**2.80 J**
Nickel	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	1.20 U	1.20 U	1.20 U	1.20 U	**0.210 J**		**0.190 J**		**0.340 J**
Potassium	Aqueous			**2040**	**1840**	**2210**	**2320**	**2120**		**2150**		**2030**
Selenium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	**0.410 J**	**0.350 J**	3.00 U	**0.410 J**	**0.240 J**		**0.440 J**		**0.200 J**
Silver	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U		0.400 U
Sodium	Aqueous			**7910**	**9310**	**9240**	**7970**	**7120**		**8800**		**8210**
Thallium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400 U	0.400 U	**0.100 J**		**0.140 J**		0.400 U
Vanadium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**0.500 J**	**0.570 J**	**0.610 J**	**0.600 J**	**0.920 J**		**1.90 J**		**1.50 J**

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-001				PR79-BR-002				
			Sample ID	PR79-BR-001-P1-01	PR79-BR-001-P2-01	PR79-BR-001-P3-01	PR79-GW-FD03-01 (FD)	PR79-BR-002-P1-01	PR79-BR-002-P1-01-R	PR79-BR-002-P2-01	PR79-BR-002-P2-01-R	PR79-BR-002-P3-01
			Sampling Date	15-Dec-20	15-Dec-20	15-Dec-20	15-Dec-20	18-Dec-20	10-Feb-21	18-Dec-20	10-Feb-21	18-Dec-20
Zinc	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**22.9**	20.0 U	20.0 U	**21.9**	**13.1 J**		**33.1**		**79.7**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	100 U	100 U	100 U	100 U	100 U		100 U		100 U
Antimony, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	0.500 U	0.500 U	1.00 U	0.500 U	**0.0930 J**		**0.110 J**		**0.140 J**
Arsenic, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**10.2**	5.00 U	**8.90**	**9.15**	**3.86 J**		**2.88 J**		**1.70 J**
Beryllium, Dissolved	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U		0.200 U		0.200 U
Calcium, Dissolved	Aqueous			**22600**	**18100**	**18200**	**21400**	**10200**		**13000**		**11800**
Chromium, Dissolved	Aqueous	USEPA MCL March 2018	100	**0.400 J**	**0.560 J**	4.00 U	**0.460 J**	4.00 U		**0.570 J**		**0.550 J**
Cobalt, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	0.300 U	0.300 U	0.300 U	0.300 U	**0.0610 J**		**0.0830 J**		0.300 U
Copper, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	10.0 U	10.0 U	10.0 U	10.0 U	**1.50 J**		**3.00 J**		**2.40 J**
Iron, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U		80.0 U		80.0 U
Lead, Dissolved	Aqueous	USEPA MCL March 2018	15	**2.75**	**1.75**	**1.89**	**1.69**	1.00 U		1.00 U		0.500 U
Magnesium, Dissolved	Aqueous			**3990**	**3510**	**3230**	**4230**	**1530**		**1940**		**1780**
Manganese, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**21.9**	**5.00**	**63.3**	**24.0**	**24.8**		**4.80 J**		**2.70 J**
Nickel, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	1.20 U	1.20 U	1.20 U	1.20 U	**0.480 J**		**0.420 J**		**0.170 J**
Potassium, Dissolved	Aqueous			**2450**	**2010**	**2100**	**2290**	**2240**		**2150**		**1940**
Selenium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	**0.370 J**	**0.270 J**	3.00 U	**0.460 J**	3.00 U		**0.330 J**		**0.280 J**
Silver, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous			**7700**	**9510**	**8710**	**7970**	**7300**		**8500**		**7910**
Thallium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400	0.400	0.400	0.400	0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**0.480 J**	**0.830 J**	**0.410 J**	**0.350 J**	**0.990 J**		**1.70 J**		**1.50 J**
Zinc, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	20.0 U	10.0 U	10.0 U	10.0 U	**3.40 J**		**15.4 J**		**6.80 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	**0.760 J**	**5.30**	**4.90**	**0.420 J**	0.170 U		**3.10**		**2.40 J**
2-Methylnaphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 UJ		0.0930 UJ
Acenaphthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	53	0.0960 UJ	0.0960 UJ	0.0970 UJ	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Acenaphthylene	Aqueous	Tapwater RSLs Alternate Compound Selection	53	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 UJ		0.0930 UJ
Anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	180	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 UJ		0.0930 UJ
Benzo(a)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.03	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 UJ		0.0930 UJ
Benzo(a)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 UJ		0.0930 UJ
Benzo(b)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Benzo(g,h,i)perylene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Benzo(k)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.5	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Chrysene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	25	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Dibenz(a,h)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-001				PR79-BR-002				
			Sample ID	PR79-BR-001-P1-01	PR79-BR-001-P2-01	PR79-BR-001-P3-01	PR79-GW-FD03-01 (FD)	PR79-BR-002-P1-01	PR79-BR-002-P1-01-R	PR79-BR-002-P2-01	PR79-BR-002-P2-01-R	PR79-BR-002-P3-01
			Sampling Date	15-Dec-20	15-Dec-20	15-Dec-20	15-Dec-20	18-Dec-20	10-Feb-21	18-Dec-20	10-Feb-21	18-Dec-20
Fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	80	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Fluorene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	29	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.25	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 UJ		0.0930 UJ
Naphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.17	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Pentachlorophenol	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.041	0.480 U	0.480 U	0.480 U			0.520 U		0.480 U	
Phenanthrene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 U		0.100 U		0.0930 UJ
Pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	12	0.0960 U	0.0960 U	0.0970 U	0.0930 UJ	0.0930 UJ		0.100 U		0.0930 UJ
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Aqueous	USEPA MCL March 2018	200	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	2.8	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	USEPA MCL March 2018	7	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.7	0.0250 UJ	0.0250 U	0.0250 U	0.0250 U	0.0250 U		0.0250 UJ		0.0250 UJ
1,2,4-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.4	0.0250 UJ	0.0250 U	0.0250 U	0.0250 U	0.0250 U		0.0250 UJ		0.0250 UJ
1,2,4-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	5.6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	30	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM Method 1 Groundwater Objective (GA)	600	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	560	2.50 U	2.50 U	2.50 U	2.50 U	**3.90 J**		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	630	2.50 U	2.50 U	2.50 U	2.50 U	2.50 UJ		2.50 UJ		2.50 UJ
Acetone	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	1400	**6.00 J**	5.00 U	5.00 U	**5.80 J**	2.50 U		**16.0**		**20.0**
Benzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.46	**0.0180 J**	**0.0110 J**	**0.160**	**0.0230 J**	0.0250 U		**0.0270 J**		**0.0430 J**
Bromodichloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.13	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.75	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ	1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	81	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	2100	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.22	**0.300 J**	**0.400 J**	**3.20**	**0.290 J**	**0.280**		**0.340 J**		**0.350 J**
Chloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	19	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	3.6	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		**0.350 J**		**0.330 J**
Dibromochloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.87	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	1.5	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	45	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	19	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	USEPA MCL March 2018	5	2.50 U	2.50 U	2.50 U	2.50 U	5.00 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	100	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	66	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	19	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-001				PR79-BR-002				
			Sample ID	PR79-BR-001-P1-01	PR79-BR-001-P2-01	PR79-BR-001-P3-01	PR79-GW-FD03-01 (FD)	PR79-BR-002-P1-01	PR79-BR-002-P1-01-R	PR79-BR-002-P2-01	PR79-BR-002-P2-01-R	PR79-BR-002-P3-01
			Sampling Date	15-Dec-20	15-Dec-20	15-Dec-20	15-Dec-20	18-Dec-20	10-Feb-21	18-Dec-20	10-Feb-21	18-Dec-20
p-Cymene (p-Isopropyltoluene)	Aqueous	Tapwater RSLs Alternate Compound Selection	45	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	200	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selection	200	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		5.00 U
tert-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	69	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
Toluene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	110	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		**0.470 J**		**0.640 J**
trans-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	36	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.28	**0.870 J**	**1.90**	**0.750 J**	**0.590 J**	**0.920**		**100**		**79.0**
Vinyl chloride	Aqueous	USEPA Tapwater RSL (TR=1E-6; THO=0.1)	.019	0.0500 UJ	0.0500 U	0.0500 U	0.0500 U	0.0500 U		0.0500 UJ		0.0500 UJ

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-002			PR79-BR-003					
			Sample ID	PR79-BR-002-P4-01	PR79-BR-002-P5-01	PR79-BR-002-P5-01-R	PR79-BR-003-P1-01	PR79-BR-003-P1-01-R	PR79-BR-003-P2-01	PR79-BR-003-P2-01-R	PR79-BR-003-P3-01	PR79-BR-003-P4-01
			Sampling Date	18-Dec-20	18-Dec-20	10-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	21-Dec-20
DISSOLVEDGAS (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Ethane	Aqueous			5.00 U	5.00 U		5.00 U		5.00 U		5.00 U	5.00 U
Ethene	Aqueous			5.00 U	5.00 U		5.00 U		5.00 U		5.00 U	5.00 U
Methane	Aqueous			5.00 U	5.00 U		**3.30 J**		**3.30 J**		**3.20 J**	**3.20 J**
GENCHEM (MG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Aqueous			0.800 U	0.800 U		0.800 U		0.800 U		0.800 U	0.800 U
Total Organic Carbon	Aqueous			0.500 U	**29.0**		**1.20**		**2.00**		**7.60**	**3.20**
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Alkalinity, Total (as CaCO3)	Aqueous			**47000**	**130000**		**23000 J**		**31000 J**		**43000 J**	**120000 J**
Chloride	Aqueous			**3400**	**11000**		**4300**		**4100**		**3800**	**3800**
Nitrate (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3200	**200 J**	50.0 UJ		**150**		**510**		50.0 U	**82.0 J**
Nitrite (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	**30.0 J**	**160 J**		**11.0 J**		**11.0 J**		**59.0**	**55.0**
Sulfate	Aqueous			**9400**	**8400**		**9000**		**9100**		**16000**	**18000**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U		0.100 U		0.100 U		0.100 U	0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100	0.100		0.100 U		0.100 U		0.100 U	0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	100 U	100 U		100 U		100 U		100 U	100 U
Antimony	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	**0.666 J**	**0.587 J**		**0.420 J**		**0.677 J**		**1.58**	**1.02**
Arsenic	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	4.00 U	4.00 U		4.00 U		4.00 U		4.00 U	4.00 U
Barium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**6.68**	**14.3**		**23.7**		**19.8**		**21.6**	**19.2**
Beryllium	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U		0.200 U		0.200 U		0.200 U	0.200 U
Cadmium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	**0.0340 J**		0.200 U		0.200 U		0.200 U	0.200 U
Calcium	Aqueous			**12800**	**29200**		**8570**		**10400**		**14800**	**44200**
Chromium	Aqueous	USEPA MCL March 2018	100	**0.560 J**	4.00 U		4.00 U		**0.500 J**		4.00 U	**0.570 J**
Cobalt	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.0840 J**	**0.180 J**		**0.400 J**		**0.180 J**		**0.440 J**	**0.220 J**
Copper	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**2.60 J**	**4.70 J**		**3.90 J**		**7.46 J**		**5.50 J**	**3.20 J**
Iron	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	80.0 U	**812**		**30.0 J**		**21.0 J**		**50.0 J**	**210**
Lead	Aqueous	USEPA MCL March 2018	15	**2.69**	1.00 U		**4.79**		**3.17**		**4.87**	**3.01**
Magnesium	Aqueous			**1880**	**1900**		**1140**		**1230**		**1780**	**2480**
Manganese	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**27.1**	**141**		**9.70**		**31.7**		**43.0**	**122**
Nickel	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**0.340 J**	**0.280 J**		**2.28**		**2.16**		**2.05**	**0.630 J**
Potassium	Aqueous			**2500**	**3160**		**2100**		**2960**		**3120**	**3120**
Selenium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	**0.350 J**	**0.270 J**		**0.220 J**		3.00 U		**0.210 J**	**0.600 J**
Silver	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U		0.400 U		0.400 U		0.400 U	0.400 U
Sodium	Aqueous			**8420**	**13600**		**4700**		**5210**		**6320**	**9190**
Thallium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U		**0.120 J**		0.400 U		0.400 U	0.400 U

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-002			PR79-BR-003					
			Sample ID	PR79-BR-002-P4-01	PR79-BR-002-P5-01	PR79-BR-002-P5-01-R	PR79-BR-003-P1-01	PR79-BR-003-P1-01-R	PR79-BR-003-P2-01	PR79-BR-003-P2-01-R	PR79-BR-003-P3-01	PR79-BR-003-P4-01
			Sampling Date	18-Dec-20	18-Dec-20	10-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	21-Dec-20
Vanadium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**0.780 J**	4.00 U		**0.350 J**		**0.490 J**		**0.480 J**	**0.700 J**
Zinc	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**3.80 J**	**1.30 J**		**43.7**		**34.8**		20.0 U	10.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	100 U	100 U		100 U		100 U		100 U	100 U
Antimony, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	**0.490 J**	**0.350 J**		**0.140 J**		**0.620 J**		**1.07**	**1.02**
Arsenic, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	4.00 U	4.00 U		4.00 U		4.00 U		4.00 U	4.00 U
Barium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**6.11**	**10.5**		**22.6**		**19.3**		**21.0**	**18.8**
Beryllium, Dissolved	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U		0.200 U		0.200 U		0.200 U	0.200 U
Cadmium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U		0.200 U		0.200 U		0.200 U	0.200 U
Calcium, Dissolved	Aqueous			**12800**	**34200**		**8910**		**11200**		**14600**	**46300**
Chromium, Dissolved	Aqueous	USEPA MCL March 2018	100	**0.590 J**	4.00 U		4.00 U		**0.690 J**		4.00 U	**0.480 J**
Cobalt, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	0.300 U	**0.180 J**		**0.240 J**		**0.180 J**		**0.580 J**	**0.240 J**
Copper, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**2.40 J**	**1.20 J**		**4.80 J**		**4.10 J**		**3.40 J**	**1.90 J**
Iron, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	80.0 U	**586**		**19.0 J**		**9.80 J**		**57.6 J**	**140**
Lead, Dissolved	Aqueous	USEPA MCL March 2018	15	1.00 U	0.500 U		**4.35**		**1.94**		**1.19**	**0.250 J**
Magnesium, Dissolved	Aqueous			**1920**	**1890**		**1240**		**1350**		**1700**	**2570**
Manganese, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**23.6**	**150**		**8.70**		**33.1**		**50.9**	**115**
Nickel, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**0.530 J**	**0.600 J**		**1.58 J**		**2.13**		**2.45**	**0.900 J**
Potassium, Dissolved	Aqueous			**2540**	**3400**		**2070**		**3190**		**3120**	**3250**
Selenium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	**0.290 J**	3.00 U		3.00 U		3.00 U		3.00 U	**0.690 J**
Silver, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U		0.400 U		0.400 U		0.400 U	0.400 U
Sodium, Dissolved	Aqueous			**8640**	**16200**		**4750**		**5760**		**6080**	**9490**
Thallium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U		0.400 U		0.400 U		0.400 U	0.400 U
Vanadium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**0.840 J**	4.00 U		**0.370 J**		**0.310 J**		**0.340 J**	**0.550 J**
Zinc, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	**5.20 J**	**0.790 J**		10.0 U		20.0 U		10.0 U	10.0 U
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	**1.10 J**	**8.50**		**2.60 J**		**12.0 J**		**6.80**	**4.70 J**
2-Methylnaphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.0960 UJ	0.0930 UJ		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Acenaphthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	53	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Acenaphthylene	Aqueous	Tapwater RSLs Alternate Compound Selection	53	0.0960 UJ	0.0930 UJ		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	180	0.0960 UJ	0.0930 UJ		0.0930 UJ		0.100 UJ		0.0930 UJ	0.0940 UJ
Benzo(a)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.03	0.0960 UJ	0.0930 UJ		0.0930 UJ		0.100 UJ		0.0930 UJ	0.0940 UJ
Benzo(a)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0960 UJ	0.0930 UJ		0.0930 UJ		0.100 UJ		0.0930 UJ	0.0940 UJ
Benzo(b)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Benzo(g,h,i)perylene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Benzo(k)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.5	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-002			PR79-BR-003					
			Sample ID	PR79-BR-002-P4-01	PR79-BR-002-P5-01	PR79-BR-002-P5-01-R	PR79-BR-003-P1-01	PR79-BR-003-P1-01-R	PR79-BR-003-P2-01	PR79-BR-003-P2-01-R	PR79-BR-003-P3-01	PR79-BR-003-P4-01
			Sampling Date	18-Dec-20	18-Dec-20	10-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	21-Dec-20
Chrysene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	25	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Dibenz(a,h)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Fluorene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	29	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0960 UJ	0.0930 UJ		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Naphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.17	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Pentachlorophenol	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.041			0.480 U		0.490 U		0.470 U		
Phenanthrene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
Pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	12	0.0960 UJ	0.0930 U		0.0930 UJ		0.100 UJ		0.0930 U	0.0940 UJ
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Aqueous	USEPA MCL March 2018	200	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
1,1-Dichloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.8	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
1,1-Dichloroethene	Aqueous	USEPA MCL March 2018	7	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.7	0.0250 UJ	0.0250 U		0.0250 U		0.0250 U		0.0250 U	0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.4	0.0250 UJ	0.0250 U		0.0250 U		0.0250 U		0.0250 U	0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	5.6	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
1,2-Dichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	30	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	6	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM Method 1 Groundwater Objective (GA)	600	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
2-Butanone (MEK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	560	2.50 U	**400**		2.50 U		2.50 U		2.50 U	**1.80 J**
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	630	2.50 UJ	2.50 UJ		2.50 UJ		2.50 UJ		2.50 UJ	2.50 UJ
Acetone	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	2.50 U	**23.0**		**51.0 J**		**42.0 J**		**16.0 J**	**4.60 J**
Benzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	**0.0290 J**	**0.210**		**0.0740**		**0.190**		**0.350**	**0.0250 J**
Bromodichloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.13	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
Bromomethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.75	1.00 U	1.00 U		1.00 U		1.00 U		1.00 U	1.00 U
Carbon disulfide	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	81	0.500 U	**0.420 J**		0.500 U		0.500 U		0.500 U	0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U	1.00 U		1.00 UJ		1.00 UJ		1.00 UJ	1.00 UJ
Chloroform	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.22	**0.760 J**	**10.0**		**0.440 J**		**0.890 J**		**2.90**	**1.20**
Chloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U		1.00 U		1.00 U		1.00 U	1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
Dibromochloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.87	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
Ethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1.5	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	45	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
m,p-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U		1.00 U		1.00 U		1.00 U	1.00 U
Methylene chloride	Aqueous	USEPA MCL March 2018	5	2.50 U	2.50 U		2.50 U		2.50 U		2.50 U	2.50 U

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-002			PR79-BR-003					
			Sample ID	PR79-BR-002-P4-01	PR79-BR-002-P5-01	PR79-BR-002-P5-01-R	PR79-BR-003-P1-01	PR79-BR-003-P1-01-R	PR79-BR-003-P2-01	PR79-BR-003-P2-01-R	PR79-BR-003-P3-01	PR79-BR-003-P4-01
			Sampling Date	18-Dec-20	18-Dec-20	10-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	11-Feb-21	21-Dec-20	21-Dec-20
n-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	100	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
n-Propylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	66	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
o-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	Tapwater RSLs Alternate Compound Selection	45	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
sec-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selection	200	5.00 U	5.00 U		5.00 UJ		5.00 U		5.00 U	5.00 U
tert-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	69	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
Toluene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	110	0.500 U	**34.0**		0.500 U		**0.900 J**		**3.80**	**4.60**
trans-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	36	0.500 U	0.500 U		0.500 U		0.500 U		0.500 U	0.500 U
Trichloroethene (TCE)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.28	**60.0**	**2.30**		0.0250 U		**0.0880**		0.500 U	**0.360**
Vinyl chloride	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.019	0.0500 UJ	0.0500 U		0.0500 U		0.0500 U		0.0500 U	0.0500 U

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-003	PR79-BR-004		PR79-BR-005					
			Sample ID	PR79-BR-DUP02-01-R (FD)	PR79-BR-004-P1-01	PR79-GW-FD04-01 (FD)	PR79-BR-005-P1-01	PR79-BR-005-P1-01-R	PR79-BR-005-P2-01	PR79-BR-005-P2-01-R	PR79-BR-005-P3-01	PR79-BR-005-P3-01-R
			Sampling Date	11-Feb-21	16-Dec-20	16-Dec-20	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21
DISSOLVEDGAS (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Ethane	Aqueous				5.00 U	5.00 U	5.00 U		5.00 U		5.00 U	
Ethene	Aqueous				5.00 U	5.00 U	5.00 U		5.00 U		5.00 U	
Methane	Aqueous				10.0 U	10.0 U	**3.20 J**		**3.20 J**		**3.00 J**	
GENCHEM (MG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Aqueous				0.800 U	0.800 U	0.800 U		0.800 U		0.800 U	
Total Organic Carbon	Aqueous				**1.70**	**1.80**	**6.00 J**		**3.30**		**7.30**	
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Alkalinity, Total (as CaCO3)	Aqueous				**40000**	**39000**	**26000 J**		**30000 J**		**32000 J**	
Chloride	Aqueous				**46000**	**46000**	**18000**		**23000**		**19000**	
Nitrate (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3200		**210 J**	**230**	**6900**		**7200**		**6400**	
Nitrite (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200		**74.0 J**	**76.0**	**32.0 J**		**35.0 J**		**290**	
Sulfate	Aqueous				**8000**	**7900**	**8600**		**9600**		**9500**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57		0.100 U	0.100 U	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57		0.100 U	0.100 U	0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000		100 U	100 U	100 U		100 U		100 U	
Antimony	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78		1.00 U	1.00 U	**0.520 J**		**0.689 J**		**1.10**	
Arsenic	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052		4.00 U	4.00 U	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380		**16.3**	**14.1**	**32.0**		**16.0**		**29.4**	
Beryllium	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5		0.200 U	0.200 U	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92		0.200 U	0.200 U	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous				**14300**	**13200**	**16000**		**19100**		**16200**	
Chromium	Aqueous	USEPA MCL March 2018	100		**0.440 J**	**0.490 J**	**0.820 J**		4.00 U		4.00 U	
Cobalt	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6		0.300 U	0.300 U	**0.190 J**		**0.180 J**		**0.590 J**	
Copper	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80		10.0 U	10.0 U	**20.0 J**		**11.2 J**		**18.5 J**	
Iron	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400		80.0 U	80.0 U	**30.0 J**		**17.0 J**		**17.0 J**	
Lead	Aqueous	USEPA MCL March 2018	15		**3.17**	**2.62**	**26.1 J**		**36.9**		**45.7**	
Magnesium	Aqueous				**1120**	**1080**	**1560**		**2300**		**1660**	
Manganese	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43		**18.7**	**17.5**	**7.20**		**11.5**		**22.8**	
Nickel	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39		1.20 U	1.20 U	**0.840 J**		**0.640 J**		**2.22**	
Potassium	Aqueous				**2680**	**2780**	**5730**		**5170**		**5300**	
Selenium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10		3.00 U	3.00 U	**0.460 J**		**0.430 J**		**0.480 J**	
Silver	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4		0.400 U	0.400 U	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous				**32100**	**32800**	**17400**		**17000**		**15500**	
Thallium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02		0.400 U	0.400 U	0.400 U		0.400 U		0.400 U	

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-003	PR79-BR-004		PR79-BR-005					
			Sample ID	PR79-BR-DUP02-01-R (FD)	PR79-BR-004-P1-01	PR79-GW-FD04-01 (FD)	PR79-BR-005-P1-01	PR79-BR-005-P1-01-R	PR79-BR-005-P2-01	PR79-BR-005-P2-01-R	PR79-BR-005-P3-01	PR79-BR-005-P3-01-R
			Sampling Date	11-Feb-21	16-Dec-20	16-Dec-20	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21
Vanadium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6		4.00 U	**0.270 J**	**0.980 J**		**0.540 J**		**0.390 J**	
Zinc	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600		10.0 U	10.0 U	**74.0 J**		**41.3**		**31.9**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000		100 U	100 U	100 U		100 U		100 U	
Antimony, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78		1.00 U	1.00 U	**0.510 J**		**0.647 J**		**1.14**	
Arsenic, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052		4.00 U	4.00 U	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380		**14.3**	**12.0**	**30.3**		**17.5**		**31.1**	
Beryllium, Dissolved	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5		0.200 U	0.200 U	0.200 U		0.200 U		0.200 U	
Cadmium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92		0.200 U	0.200 U	0.200 U		0.200 U		0.200 U	
Calcium, Dissolved	Aqueous				**13200**	**12000**	**16000**		**20300**		**17500**	
Chromium, Dissolved	Aqueous	USEPA MCL March 2018	100		4.00 U	4.00 U	**0.370 J**		**0.400 J**		4.00 U	
Cobalt, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6		0.300 U	0.300 U	**0.230 J**		**0.140 J**		**0.590 J**	
Copper, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80		10.0 U	10.0 U	**13.6 J**		**11.3 J**		**21.1 J**	
Iron, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400		80.0 U	80.0 U	**18.0 J**		**10.0 J**		**17.0 J**	
Lead, Dissolved	Aqueous	USEPA MCL March 2018	15		**1.82**	**2.10**	**11.4 J**		**31.7**		**41.6**	
Magnesium, Dissolved	Aqueous				**1040**	**1130**	**1540**		**2450**		**1780**	
Manganese, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43		**19.6**	**15.6**	**7.60**		**12.3**		**24.8**	
Nickel, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39		1.20 U	1.20 U	**1.00 J**		**0.960 J**		**2.66**	
Potassium, Dissolved	Aqueous				**2850**	**2440**	**5530**		**5380**		**5670**	
Selenium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10		3.00 U	3.00 U	**0.520 J**		**0.430 J**		**0.460 J**	
Silver, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4		0.400 U	0.400 U	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous				**32600**	**29900**	**16400**		**17900**		**16500**	
Thallium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02		0.400	0.400	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6		**0.300 J**	4.00 U	**0.750 J**		**0.900 J**		**0.670 J**	
Zinc, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600		10.0 U	10.0 U	**26.4**		**42.2**		**34.9**	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46		**0.590**	**0.650**	**8.50 J**		**18.0 J**		**15.0**	
2-Methylnaphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Acenaphthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	53		0.0980 UJ	0.0960 UJ	0.0960 U		0.0990 U		0.100 U	
Acenaphthylene	Aqueous	Tapwater RSLs Alternate Compound Selection	53		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	180		0.0980 U	0.0960 U	0.0960 UJ		0.0990 UJ		0.100 UJ	
Benzo(a)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.03		0.0980 U	0.0960 U	0.0960 UJ		0.0990 UJ		0.100 UJ	
Benzo(a)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025		0.0980 U	0.0960 U	0.0960 UJ		0.0990 UJ		0.100 UJ	
Benzo(b)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Benzo(g,h,i)perylene	Aqueous	Tapwater RSLs Alternate Compound Selection	12		**0.160 J**	**0.0760 J**	0.0960 U		0.0990 U		0.100 U	
Benzo(k)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.5		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-003	PR79-BR-004		PR79-BR-005					
			Sample ID	PR79-BR-DUP02-01-R (FD)	PR79-BR-004-P1-01	PR79-GW-FD04-01 (FD)	PR79-BR-005-P1-01	PR79-BR-005-P1-01-R	PR79-BR-005-P2-01	PR79-BR-005-P2-01-R	PR79-BR-005-P3-01	PR79-BR-005-P3-01-R
			Sampling Date	11-Feb-21	16-Dec-20	16-Dec-20	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21
Chrysene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	25		0.0980 U	**0.0530 J**	0.0960 U		0.0990 U		0.100 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Fluorene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	29		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25		**0.110 J**	**0.0710 J**	0.0960 U		0.0990 U		0.100 U	
Naphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.17		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Pentachlorophenol	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.041	0.480 U	0.490 U	0.480 U		0.470 UJ		0.470 U		0.480 U
Phenanthrene	Aqueous	Tapwater RSLs Alternate Compound Selection	12		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
Pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	12		0.0980 U	0.0960 U	0.0960 U		0.0990 U		0.100 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Aqueous	USEPA MCL March 2018	200		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.8		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	USEPA MCL March 2018	7		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.7		0.0250 U	0.0250 U	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.4		0.0250 U	0.0250 U	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	5.6		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	30		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	6		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM Method 1 Groundwater Objective (GA)	600		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	560		2.50 U	2.50 U	**4.20 J**		**4.50 J**		**5.60**	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	630		2.50 U	2.50 U	2.50 UJ		2.50 UJ		2.50 UJ	
Acetone	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400		**9.60 J**	2.50 U	**36.0 J**		**34.0 J**		2.50 UJ	
Benzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46		0.0250 U	0.0250 U	0.0250 U		**0.0200 J**		**0.0260 J**	
Bromodichloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.13		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.75		1.00 UJ	1.00 UJ	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	81		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100		1.00 U	1.00 U	1.00 UJ		1.00 UJ		1.00 UJ	
Chloroform	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.22		**0.220 J**	**0.360 J**	**3.50**		**3.20 J**		**4.20**	
Chloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19		1.00 U	1.00 U	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.87		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1.5		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	45		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19		1.00 U	1.00 U	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA MCL March 2018	5		2.50 U	2.50 U	2.50 U		2.50 U		2.50 U	

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-003	PR79-BR-004		PR79-BR-005					
			Sample ID	PR79-BR-DUP02-01-R (FD)	PR79-BR-004-P1-01	PR79-GW-FD04-01 (FD)	PR79-BR-005-P1-01	PR79-BR-005-P1-01-R	PR79-BR-005-P2-01	PR79-BR-005-P2-01-R	PR79-BR-005-P3-01	PR79-BR-005-P3-01-R
			Sampling Date	11-Feb-21	16-Dec-20	16-Dec-20	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21	21-Dec-20	12-Feb-21
n-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	100		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	66		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	Tapwater RSLs Alternate Compound Selection	45		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selection	200		5.00 U	5.00 U	5.00 U		5.00 U		5.00 U	
tert-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	69		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	110		**1.20**	**0.520 J**	0.500 U		0.500 U		**10.0**	
trans-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	36		0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.28		0.0250 U	0.0250 U	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.019		0.0500 U	0.0500 U	0.0500 U		0.0500 U		0.0500 U	

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-005		PR79-WL-002
			Sample ID	PR79-BR-005-P4-01	PR79-GW-FD05-01 (FD)	PR79-WL-002-01
			Sampling Date	21-Dec-20	21-Dec-20	04-Dec-20
DISSOLVEDGAS (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Ethane	Aqueous			5.00 U	5.00 U	5.00 U
Ethene	Aqueous			5.00 U	5.00 U	5.00 U
Methane	Aqueous			**3.20 J**	**2.90 J**	5.00 U
GENCHEM (MG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Sulfide	Aqueous			0.800 U	0.800 U	0.800 U
Total Organic Carbon	Aqueous			**55.0**	**4.90 J**	**1.60**
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Alkalinity, Total (as CaCO3)	Aqueous			**120000 J**	**28000 J**	**49000**
Chloride	Aqueous			**19000**	**17000**	**3800**
Nitrate (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3200	**130**	**7000**	**510**
Nitrite (as N)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	**400**	**50.0**	25.0 U
Sulfate	Aqueous			**15000**	**10000**	**1900**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Mercury	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Mercury, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.57	0.100 U	0.100 U	**0.0220 J**
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Aluminum	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	100 U	100 U	**21.0 J**
Antimony	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	**1.93**	**0.420 J**	0.500 U
Arsenic	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	4.00 U	4.00 U	4.00 U
Barium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**16.8**	**30.7**	**6.22 J**
Beryllium	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U	0.200 U
Cadmium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	**0.0340 J**	0.200 U
Calcium	Aqueous			**43000**	**16700**	**13300 J**
Chromium	Aqueous	USEPA MCL March 2018	100	**0.470 J**	**0.540 J**	**0.970 J**
Cobalt	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.300 J**	**0.280 J**	0.300 U
Copper	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**4.50 J**	**12.5 J**	**6.30 J**
Iron	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**202**	**52.0 J**	**530**
Lead	Aqueous	USEPA MCL March 2018	15	**3.34**	**9.63 J**	0.500 U
Magnesium	Aqueous			**2270**	**1670**	**3970**
Manganese	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**80.0**	**9.00**	**2.30 J**
Nickel	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**1.40 J**	**0.650 J**	1.20 U
Potassium	Aqueous			**5940**	**5590**	**2170**
Selenium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	**0.730 J**	**0.480 J**	3.00 U
Silver	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U
Sodium	Aqueous			**15000**	**16100**	**9450**
Thallium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400 U
Vanadium	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**0.660 J**	**0.810 J**	**1.60 J**
Zinc	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	10.0 U	10.0 U	**32.9**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
Aluminum, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2000	100 U	100 U	100 U
Antimony, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.78	**1.90**	**0.520 J**	0.500 U
Arsenic, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.052	4.00 U	4.00 U	4.00 U
Barium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	380	**16.2**	**30.1**	**6.12 J**
Beryllium, Dissolved	Aqueous	USEPA Tapwater RSL Be only (TR=1E-6;THQ=0.1)	2.5	0.200 U	0.200 U	0.200 U
Cadmium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.92	0.200 U	0.200 U	0.200 U
Calcium, Dissolved	Aqueous			**42700**	**15000**	**13600 J**
Chromium, Dissolved	Aqueous	USEPA MCL March 2018	100	**0.490 J**	4.00 U	**0.610 J**
Cobalt, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.6	**0.330 J**	**0.220 J**	0.300 U
Copper, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	**2.90 J**	**18.2 J**	**3.00 J**
Iron, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**113**	**19.0 J**	80.0 U
Lead, Dissolved	Aqueous	USEPA MCL March 2018	15	**1.97**	**16.5 J**	0.500 U
Magnesium, Dissolved	Aqueous			**2110**	**1460**	**3830**
Manganese, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	43	**70.2**	**6.80**	4.00 U
Nickel, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	39	**1.72 J**	**1.00 J**	1.20 U
Potassium, Dissolved	Aqueous			**5690**	**5480**	**2210**
Selenium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	10	**0.760 J**	**0.540 J**	3.00 U
Silver, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	9.4	0.400 U	0.400 U	0.400 U
Sodium, Dissolved	Aqueous			**14200**	**16300**	**9630**
Thallium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.02	0.400 U	0.400 U	0.400
Vanadium, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	8.6	**0.580 J**	**0.560 J**	**1.20 J**
Zinc, Dissolved	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	600	10.0 U	**57.9**	**32.8**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	**17.0 J**	**2.30 J**	0.170 UJ
2-Methylnaphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.0990 UJ	0.0970 U	0.0930 UJ
Acenaphthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	53	0.0990 UJ	0.0970 U	0.0930 UJ
Acenaphthylene	Aqueous	Tapwater RSLs Alternate Compound Selection	53	0.0990 UJ	0.0970 U	0.0930 UJ
Anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	180	0.0990 UJ	0.0970 UJ	0.0930 UJ
Benzo(a)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.03	0.0990 UJ	0.0970 UJ	0.0930 UJ
Benzo(a)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0990 UJ	0.0970 UJ	0.0930 UJ
Benzo(b)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0990 UJ	0.0970 U	0.0930 UJ

Table A-9 Summary of Detected Analytical Results in Bedrock Groundwater
2020 Groundwater Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-BR-005		PR79-WL-002
			Sample ID	PR79-BR-005-P4-01	PR79-GW-FD05-01 (FD)	PR79-WL-002-01
			Sampling Date	21-Dec-20	21-Dec-20	04-Dec-20
Benzo(g,h,i)perylene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0990 UJ	0.0970 U	0.0930 UJ
Benzo(k)fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.5	0.0990 UJ	0.0970 U	0.0930 UJ
Chrysene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	25	0.0990 UJ	0.0970 U	0.0930 UJ
Dibenz(a,h)anthracene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.025	0.0990 UJ	0.0970 U	0.0930 UJ
Fluoranthene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	80	0.0990 UJ	0.0970 U	0.0930 UJ
Fluorene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	29	0.0990 UJ	0.0970 U	0.0930 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.25	0.0990 UJ	0.0970 U	0.0930 UJ
Naphthalene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.17	0.0990 UJ	0.0970 U	0.0930 UJ
Pentachlorophenol	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.041			0.470 UJ
Phenanthrene	Aqueous	Tapwater RSLs Alternate Compound Selection	12	0.0990 UJ	0.0970 U	0.0930 UJ
Pyrene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	12	0.0990 UJ	0.0970 U	0.0930 UJ
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**			
1,1,1-Trichloroethane	Aqueous	USEPA MCL March 2018	200	0.500 U	0.500 U	0.500 U
1,1-Dichloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2.8	0.500 U	0.500 U	0.500 U
1,1-Dichloroethene	Aqueous	USEPA MCL March 2018	7	0.500 U	0.500 U	0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.7	0.0250 U	0.0250 U	0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.4	0.0250 U	0.0250 U	0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	5.6	0.500 U	0.500 U	0.500 U
1,2-Dichlorobenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	30	0.500 U	0.500 U	0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	6	0.500 U	0.500 U	0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM Method 1 Groundwater Objective (GA)	600	0.500 U	0.500 U	0.500 U
2-Butanone (MEK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	560	**330**	2.50 U	2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	630	2.50 UJ	2.50 UJ	2.50 U
Acetone	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1400	**20.0 J**	**2.40 J**	2.50 U
Benzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.46	**0.0460 J**	0.0250 U	0.0250 U
Bromodichloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.13	0.500 U	0.500 U	0.500 U
Bromomethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.75	1.00 U	1.00 U	1.00 U
Carbon disulfide	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	81	0.500 U	0.500 U	0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 UJ	1.00 UJ	1.00 UJ
Chloroform	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.22	**2.60**	**3.10**	0.0250 U
Chloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U	1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	3.6	0.500 U	0.500 U	0.500 U
Dibromochloromethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.87	0.500 U	0.500 U	0.500 U
Ethylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	1.5	0.500 U	0.500 U	0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	45	0.500 U	0.500 U	0.500 U
m,p-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	1.00 U	1.00 U	1.00 U
Methylene chloride	Aqueous	USEPA MCL March 2018	5	2.50 U	2.50 U	2.50 U
n-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	100	0.500 U	0.500 U	0.500 U
n-Propylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	66	0.500 U	0.500 U	0.500 U
o-Xylene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	19	0.500 U	0.500 U	0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	Tapwater RSLs Alternate Compound Selection	45	0.500 U	0.500 U	0.500 U
sec-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	200	0.500 U	0.500 U	0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selection	200	5.00 U	5.00 UJ	5.00 U
tert-Butylbenzene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	69	0.500 U	0.500 U	0.500 U
Toluene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	110	**9.10**	0.500 U	0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	36	0.500 U	0.500 U	0.500 U
Trichloroethene (TCE)	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.28	0.0250 U	0.0250 U	0.0250 U
Vinyl chloride	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	.019	0.0500 U	0.0500 U	0.0500 U

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001	PR79-WT-001	PR79-WT-002	PR79-WT-002	PR79-WT-002	PR79-WT-002
			Sample ID	PR79-WT-001-SW-01	PR79-WT-001-SW-01-F	PR79-SW-FD04-01-0511 (FD)	PR79-SW-FD04-01-F-0511 (FD)	PR79-WT-002-SW-01	PR79-WT-002-SW-01-F
			Sampling Date	04-May-20	04-May-20	11-May-20	11-May-20	11-May-20	11-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**8460**		**9010**		**9080**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**374**		300 U		300 U	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	**0.0690 J**		**0.0600 J**		**0.150 J**	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**10.5**		**11.7**		**12.1**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		**0.0990 J**		**0.0890 J**	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2170**		**2580**		**2620**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.640 J**		4.00 U		**0.530 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.290 J**		0.300 U		0.300 U	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**0.990 J**		**1.30 J**		**1.60 J**	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**192**		**203**		**226**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		**0.190 J**		**0.310 J**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**738**		**621**		**615**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**8.90**		**24.5 J**		**30.6 J**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**0.150 J**		**0.270 J**	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**488 J**		**887 J**		**848 J**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	**0.200 J**		3.00 U		**0.240 J**	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**7240**		**14800**		**14900**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	**0.0820 J**		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		4.00 U		4.00 U	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**1.80 J**		**2.30 J**		**2.90 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**100 J**		300 U		300 U
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		0.500 U		**0.130 J**
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**10.7**		**12.0**		**12.3**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		**0.0460 J**		**0.150 J**
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2400**		**2690**		**2610**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		**0.550 J**		**0.480 J**
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.230 J**		0.300 U		0.300 U
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.50 J**		**1.00 J**		10.0 U
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		80.0 U		**146**		**144**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		**0.150 J**		**0.200 J**
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**689**		**623**		**625**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**7.60**		**21.8**		**21.5**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		**0.200 J**		**0.310 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**509 J**		**874 J**		**882 J**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**8130**		**15200**		**15200**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		4.00 U		4.00 U
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**2.20 J**		**2.90 J**		**2.50 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0950 U		0.0960 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0950 U		0.0960 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0950 U		0.0960 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001	PR79-WT-001	PR79-WT-002	PR79-WT-002	PR79-WT-002	PR79-WT-002
			Sample ID	PR79-WT-001-SW-01	PR79-WT-001-SW-01-F	PR79-SW-FD04-01-0511 (FD)	PR79-SW-FD04-01-F-0511 (FD)	PR79-WT-002-SW-01	PR79-WT-002-SW-01-F
			Sampling Date	04-May-20	04-May-20	11-May-20	11-May-20	11-May-20	11-May-20
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0950 U		0.0960 U	
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0950 U		0.0960 U	
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0950 U		0.0960 U	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0950 U		0.0960 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0950 U		0.0960 U	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0950 U		0.0950 U		0.0960 U	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0950 U		0.0950 U		0.0960 U	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0950 U		0.0960 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0950 U		0.0960 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0950 U		0.0960 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0950 U		0.0960 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0950 U		0.0960 U	
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03			0.480 UJ		0.480 UJ	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0950 U		0.0960 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0950 U		0.0960 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		**0.0280 J**		**0.0270 J**	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-003	PR79-WT-003	PR79-WT-004	PR79-WT-004	PR79-WT-005	PR79-WT-005
			Sample ID	PR79-WT-003-SW-01	PR79-WT-003-SW-01-F	PR79-WT-004-SW-01	PR79-WT-004-SW-01-F	PR79-WT-005-SW-01	PR79-WT-005-SW-01-F
			Sampling Date	11-May-20	11-May-20	11-May-20	11-May-20	05-May-20	05-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**8750**		**8810**		**8350**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	300 U		300 U		**140 J**	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	**0.0630 J**		0.500 U		**0.520 J**	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**11.4**		**11.1**		**10.5**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	**0.0840 J**		**0.0580 J**		1.00 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		**0.0540 J**	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2470**		**2510**		**2380**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		**0.500 J**		4.00 U	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.300 U		0.300 U		**0.170 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**1.30 J**		**1.20 J**		**0.790 J**	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**187**		**180**		**214**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.190 J**		**0.160 J**		**1.09**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**624**		**619**		**583**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**20.6**		**15.6**		**14.8**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		1.20 U		1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**812 J**		**850 J**		**910 J**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**14600**		**15000**		**14600**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		**0.480 J**	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		4.00 U		4.00 U	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.60 J**		**2.20 J**		**12.7 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		300 U		300 U		**120 J**
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		0.500 U		**0.0860 J**
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**11.4**		**11.3**		**10.6**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.0380 J**		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		**0.0350 J**
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2620**		**2640**		**2470**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**0.410 J**		**0.450 J**		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.300 U		0.300 U		**0.140 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.40 J**		**1.80 J**		**12.5 J**
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**152**		**150**		**172**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.140 J**		**0.190 J**		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**618**		**625**		**596**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**15.2**		**9.60**		**9.70**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		**0.270 J**		**0.500 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**882 J**		**852 J**		**901 J**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**15000**		**15200**		**14800**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		4.00 U		**0.400 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**3.00 J**		**2.60 J**		**11.3 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0940 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-003	PR79-WT-003	PR79-WT-004	PR79-WT-004	PR79-WT-005	PR79-WT-005
			Sample ID	PR79-WT-003-SW-01	PR79-WT-003-SW-01-F	PR79-WT-004-SW-01	PR79-WT-004-SW-01-F	PR79-WT-005-SW-01	PR79-WT-005-SW-01-F
			Sampling Date	11-May-20	11-May-20	11-May-20	11-May-20	05-May-20	05-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0960 U		0.0940 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0960 U		0.0940 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0960 U		0.0940 U	
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0960 U		0.0940 U	
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0960 U		0.0940 U	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0960 U		0.0940 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0940 U	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0950 U		0.0960 U		0.0940 U	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0950 U		0.0960 U		0.0940 U	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0960 U		0.0940 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0960 U		0.0940 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0960 U		0.0940 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0960 U		0.0940 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0960 U		0.0940 U	
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03	0.480 UJ		0.480 UJ		0.470 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0960 U		0.0940 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0960 U		0.0940 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.0250 J**		**0.0210 J**		0.0250 U	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-006	PR79-WT-006	PR79-WT-007	PR79-WT-007	PR79-WT-008	PR79-WT-008
			Sample ID	PR79-WT-006-SW-01	PR79-WT-006-SW-01-F	PR79-WT-007-SW-01	PR79-WT-007-SW-01-F	PR79-WT-008-SW-01	PR79-WT-008-SW-01-F
			Sampling Date	05-May-20	05-May-20	21-May-20	21-May-20	14-May-20	14-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**8600**		**10500**		**3750**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**151 J**		300 U		100 U	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		0.500 U		**0.160 J**	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**10.7**		**18.1**		**9.67**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		**0.0360 J**		**0.0760 J**	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2450**		**3080**		**968**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.110 J**		**1.79**		**0.160 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		10.0 U	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**218**		**412**		80.0 U	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		0.500 U		**0.230 J**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**603**		**677**		**323**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**14.0**		**44.7**		**9.90**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		1.20 U		1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**878 J**		1000 U		500 U	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		**0.290 J**	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**14900**		**11400**		**2900**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		**0.110 J**	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		4.00 U		**0.380 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**3.20 J**		10.0 U		10.0 U	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**130 J**		100 U		100 U
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		**0.0660 J**		**0.0810 J**		0.500 U
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**11.4**		**16.9**		**7.54**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		**0.0360 J**		**0.0370 J**
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2360**		**2930**		**954**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		**0.420 J**		**0.470 J**
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.110 J**		**1.75**		**0.200 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**0.680 J**		10.0 U		10.0 U
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**150**		**301**		80.0 U
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		0.500 U		**0.110 J**
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**593**		**652**		**324**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**7.50**		**38.0**		**10.0**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.330 J**		**1.20 J**		**0.530 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**878 J**		1000 U		500 U
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**14100**		**10900**		**2890**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.330 J**		**0.540 J**		4.00 U
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**2.50 J**		10.0 U		10.0 U
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.180 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0930 U		0.100 U		0.0930 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-006	PR79-WT-006	PR79-WT-007	PR79-WT-007	PR79-WT-008	PR79-WT-008
			Sample ID	PR79-WT-006-SW-01	PR79-WT-006-SW-01-F	PR79-WT-007-SW-01	PR79-WT-007-SW-01-F	PR79-WT-008-SW-01	PR79-WT-008-SW-01-F
			Sampling Date	05-May-20	05-May-20	21-May-20	21-May-20	14-May-20	14-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0930 U		0.100 U		0.0930 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0930 U		0.100 U		0.0930 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0930 U		0.100 UJ		0.0930 U	
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0930 U		0.100 U		0.0930 U	
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0930 U		0.100 UJ		0.0930 U	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0930 U		0.100 U		0.0930 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0930 U		0.100 U		0.0930 U	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0930 U		0.100 U		0.0930 U	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0930 U		0.100 U		0.0930 U	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0930 U		0.100 U		0.0930 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0930 U		0.100 U		0.0930 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0930 U		0.100 U		0.0930 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0930 U		0.100 U		0.0930 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0930 U		0.100 U		0.0930 U	
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03	0.470 U		0.500 U		0.470 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0930 U		0.100 U		0.0930 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0930 U		0.100 U		0.0930 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		**3.80 J**		2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		**0.120**		0.0250 U	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		**0.520 J**		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	0.0250 U		**0.0180 J**		0.0250 U	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009	PR79-WT-009	PR79-WT-010	PR79-WT-010	PR79-WT-011
			Sample ID	PR79-WT-009-SW-01	PR79-WT-009-SW-01-F	PR79-WT-010-SW-01	PR79-WT-010-SW-01-F	PR79-WT-011-SW-01
			Sampling Date	14-May-20	14-May-20	14-May-20	14-May-20	14-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Hardness (as CaCO3)	Aqueous			**6440**		**5540**		**5200**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	300 U		**387**		**507**
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		0.500 U		0.500 U
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**7.66**		**7.00**		**8.79**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		**0.0420 J**
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1660**		**1450**		**1380**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.300 U		**0.180 J**		**0.250 J**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		10.0 U
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**21.0 J**		**188**		**353**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.0880 J**		**0.620 J**		**1.48**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**553**		**470**		**425**
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**3.30 J**		**9.30**		**5.70**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**0.220 J**		**0.510 J**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	1000 U		1000 U		1000 U
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**4210**		**3650**		**3210**
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		**0.400 J**		**0.900 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		10.0 U		10.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		300 U		**365**	
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		**0.100 J**	
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**8.13**		**7.00**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		**0.0550 J**	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		**0.0330 J**	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1800**		**1460**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.300 U		**0.180 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		10.0 U	
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		80.0 U		**148**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		**0.570 J**	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**583**		**454**	
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**2.80 J**		**8.10**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.700 J**		**0.740 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**4560**		**3690**	
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		**0.490 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		10.0 U	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.180 U		0.180 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.100 U		0.0990 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009	PR79-WT-009	PR79-WT-010	PR79-WT-010	PR79-WT-011
			Sample ID	PR79-WT-009-SW-01	PR79-WT-009-SW-01-F	PR79-WT-010-SW-01	PR79-WT-010-SW-01-F	PR79-WT-011-SW-01
			Sampling Date	14-May-20	14-May-20	14-May-20	14-May-20	14-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0960 U		0.100 U		0.0990 U
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0960 U		0.100 U		0.0990 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0960 U		0.100 U		0.0990 U
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0960 U		0.100 U		0.0990 U
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0960 U		0.100 U		0.0990 U
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0960 U		0.100 U		0.0990 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.100 U		0.0990 U
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0960 U		0.100 U		0.0990 U
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0960 U		0.100 U		0.0990 U
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0960 U		0.100 U		0.0990 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0960 U		0.100 U		0.0990 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0960 U		0.100 U		0.0990 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0960 U		0.100 U		0.0990 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0960 U		0.100 U		0.0990 U
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03					0.500 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0960 U		0.100 U		0.0990 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0960 U		0.100 U		0.0990 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**					
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		0.0250 U		0.0250 U
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-011	PR79-WT-012	PR79-WT-012	PR79-WT-013	PR79-WT-013	PR79-WT-014
			Sample ID	PR79-WT-011-SW-01-F	PR79-WT-012-SW-01	PR79-WT-012-SW-01-F	PR79-WT-013-SW-01	PR79-WT-013-SW-01-F	PR79-WT-014-SW-01
			Sampling Date	14-May-20	14-May-20	14-May-20	19-May-20	19-May-20	06-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**5830**		**11500**		**30100**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U		**0.0470 J**
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**386**		**552**		**11200**
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		**0.100 J**		**0.320 J**
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**7.34**		**11.7**		**70.3**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		**1.07**
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		**0.0510 J**		**0.180 J**
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1560**		**3250**		**7840**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		**0.930 J**		**6.70 J**
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.210 J**		**0.590 J**		**8.86**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		**2.60 J**		**4.60 J**
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**214**		**408**		**9950**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.700 J**		**1.78**		**19.4**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**472**		**818**		**2550**
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**4.00 J**		**28.4**		**454**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.480 J**		1.20 U		**4.47**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		**1420**		**1960**
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		**0.930 J**
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		**0.0750 J**
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**3340**		**3750**		**4170**
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		**0.160 J**
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.380 J**		**1.60 J**		**20.7**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		10.0 U		**55.4**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**372**		**387**		**303**	
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		**0.0580 J**		0.500 U	
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**7.82**		**7.44**		**9.22**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		**0.0370 J**	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1430**		**1640**		**3120**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.540 J**		**0.570 J**		**0.440 J**	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.190 J**		**0.200 J**		**0.230 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		**1.20 J**	
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**153**		**214**		**185**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.778 J**		**0.700 J**		1.00 U	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**430**		**472**		**754**	
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**5.00**		**4.10 J**		**11.0**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.940 J**		**0.430 J**		**0.370 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	1000 U		1000 U		**1320**	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**3220**		**3430**		**3580**	
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.520 J**		**0.640 J**		**0.950 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		10.0 U		10.0 U	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.180 U		0.170 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.100 U		0.0940 U		0.0940 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-011	PR79-WT-012	PR79-WT-012	PR79-WT-013	PR79-WT-013	PR79-WT-014
			Sample ID	PR79-WT-011-SW-01-F	PR79-WT-012-SW-01	PR79-WT-012-SW-01-F	PR79-WT-013-SW-01	PR79-WT-013-SW-01-F	PR79-WT-014-SW-01
			Sampling Date	14-May-20	14-May-20	14-May-20	19-May-20	19-May-20	06-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.100 U		0.0940 U		0.0940 U
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.100 U		0.0940 U		0.0940 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.100 U		0.0940 U		0.0940 U
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.100 U		0.0940 U		0.0940 U
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.100 U		0.0940 U		0.0940 U
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.100 U		0.0940 U		0.0940 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.100 U		0.0940 U		0.0940 U
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012		0.100 U		0.0940 U		0.0940 U
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038		0.100 U		0.0940 U		**0.0380 J**
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.100 U		0.0940 U		0.0940 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.100 U		0.0940 U		0.0940 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.100 U		0.0940 U		0.0940 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.100 U		0.0940 U		0.0940 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.100 U		0.0940 U		0.0940 U
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03		0.500 U		0.470 U		0.470 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.100 U		0.0940 U		0.0940 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.100 U		0.0940 U		0.0940 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		2.50 U		2.50 U
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100		1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		0.0250 U		0.0250 U
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19		1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20		2.50 U		**1.40 J**		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200		2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022		0.0500 U		0.0500 U		0.0500 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-014	PR79-WT-015	PR79-WT-015	PR79-WT-016	PR79-WT-016	PR79-WT-017
			Sample ID	PR79-WT-014-SW-01-F	PR79-WT-015-SW-01	PR79-WT-015-SW-01-F	PR79-WT-016-SW-01	PR79-WT-016-SW-01-F	PR79-WT-017-SW-01
			Sampling Date	06-May-20	06-May-20	06-May-20	21-May-20	21-May-20	21-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**13000**		**4280**		**4730**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		**0.0250 J**		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	**0.0140 J**		0.100 U		**0.0300 J**	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**120 J**		300 U		300 U
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		0.500 U		0.500 U
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**10.4**		**9.68**		**9.69**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.0570 J**		0.200 U		0.200 U
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		**0.0450 J**
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**3700**		**988**		**1230**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U		4.00 U
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.100 J**		0.300 U		**0.290 J**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		10.0 U		10.0 U
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		100 U		80.0 U		**127**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.250 J**		0.500 U		1.00 U
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**915**		**441**		**405**
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**8.00**		**30.7**		**11.2**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.180 J**		1.20 U		1.20 U
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		1000 U		**1100**
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**3620**		**2550**		**5130**
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.540 J**		4.00 U		4.00 U
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**1.40 J**		10.0 U		10.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**195 J**		**98.0 J**		100 U	
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	**0.0630 J**		0.500 U		**0.300 J**	
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**15.2**		**9.97**		**8.89**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	**0.0540 J**		0.200 U		0.200 U	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		**0.0910 J**	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**5580**		**3730**		**962**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.210 J**		**0.130 J**		**0.210 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		10.0 U	
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**146**		80.0 U		80.0 U	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.350 J**		**0.180 J**		0.500 U	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**1260**		**908**		**440**	
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**10.0**		**6.60**		**28.6**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.600 J**		**0.320 J**		1.20 U	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**1330**		1000 U		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**3590**		**3520**		**2470**	
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		**0.110 J**	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.590 J**		**0.400 J**		**0.280 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.10 J**		**2.50 J**		10.0 U	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.170 U		0.180 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0950 U		0.0970 U		0.100 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-014	PR79-WT-015	PR79-WT-015	PR79-WT-016	PR79-WT-016	PR79-WT-017
			Sample ID	PR79-WT-014-SW-01-F	PR79-WT-015-SW-01	PR79-WT-015-SW-01-F	PR79-WT-016-SW-01	PR79-WT-016-SW-01-F	PR79-WT-017-SW-01
			Sampling Date	06-May-20	06-May-20	06-May-20	21-May-20	21-May-20	21-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0950 U		0.0970 U		0.100 U
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0950 U		0.0970 U		0.100 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0950 U		0.0970 UJ		0.100 UJ
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0950 U		0.0970 U		0.100 U
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.0950 U		0.0970 UJ		**0.0720 J**
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0950 U		0.0970 U		0.100 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0950 U		0.0970 U		0.100 U
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012		0.0950 U		0.0970 U		0.100 U
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038		0.0950 U		0.0970 U		0.100 U
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.0950 U		0.0970 U		0.100 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0950 U		0.0970 U		0.100 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0950 U		0.0970 U		0.100 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0950 U		0.0970 U		0.100 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0950 U		0.0970 U		0.100 U
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03		0.480 U		0.480 U		0.510 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0950 U		0.0970 U		0.100 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0950 U		0.0970 U		0.100 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		2.50 U		2.50 U
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100		1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		**0.0280 J**		0.0250 U
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19		1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200		2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022		0.0500 U		0.0500 U		0.0500 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018	PR79-WT-018	PR79-WT-018	PR79-WT-018	PR79-WT-019
			Sample ID	PR79-WT-017-SW-01-F	PR79-SW-FD01-01 (FD)	PR79-SW-FD01-01-F (FD)	PR79-WT-018-SW-01	PR79-WT-018-SW-01-F	PR79-WT-019-SW-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	06-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**4460**		**4710**		**6080**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		**0.0150 J**		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		**0.0170 J**	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**239 J**		**344**		**204 J**
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		**0.0560 J**		0.500 U		0.500 U
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**7.35**		**8.60**		**7.93**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.0720 J**		**0.0400 J**		**0.0450 J**
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		0.200 U
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1050**		**1100**		**1510**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**0.560 J**		**0.590 J**		4.00 U
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.190 J**		**0.340 J**		**0.210 J**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**2.90 J**		**2.40 J**		10.0 U
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**175 J**		**302 J**		**126**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.610 J**		**1.05**		**0.340 J**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**446**		**474**		**559**
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**15.0**		**17.8**		**12.0**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.360 J**		**0.290 J**		**0.180 J**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		1000 U		1000 U
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**3260**		**3360**		**3480**
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.600 J**		**0.710 J**		**0.320 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**1.90 J**		**2.40 J**		**2.60 J**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	300 U		**199 J**		**183 J**	
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		0.500 U		0.500 U	
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**8.26**		**7.07**		**7.16**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		**0.0680 J**		**0.0540 J**	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1200**		**1130**		**1080**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		**0.720 J**		**0.510 J**	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.290 J**		**0.170 J**		**0.200 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		**2.10 J**		**1.90 J**	
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**79.5 J**		**122**		**113**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	1.00 U		**0.420 J**		**0.420 J**	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**383**		**446**		**450**	
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**10.0**		**13.2**		**13.2**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**0.450 J**		**0.300 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**1090**		1000 U		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**5070**		**3400**		**3390**	
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.600 J**		**0.550 J**		**0.380 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		**3.40 J**		**2.20 J**	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.190 U		0.190 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.100 U		0.110 U		0.0950 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018	PR79-WT-018	PR79-WT-018	PR79-WT-018	PR79-WT-019
			Sample ID	PR79-WT-017-SW-01-F	PR79-SW-FD01-01 (FD)	PR79-SW-FD01-01-F (FD)	PR79-WT-018-SW-01	PR79-WT-018-SW-01-F	PR79-WT-019-SW-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	06-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.100 U		0.110 U		0.0950 U
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.100 U		0.110 U		0.0950 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.100 U		0.110 U		0.0950 U
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.100 U		0.110 U		0.0950 U
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.100 U		0.110 U		0.0950 U
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.100 U		0.110 U		0.0950 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.100 U		0.110 U		0.0950 U
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012		0.100 U		0.110 U		0.0950 U
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038		0.100 U		0.110 U		0.0950 U
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.100 U		0.110 U		0.0950 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.100 U		0.110 U		0.0950 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.100 U		0.110 U		0.0950 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.100 U		0.110 U		0.0950 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.100 U		0.110 U		0.0950 U
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03		0.530 U		0.530 U		0.480 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.100 U		0.110 U		0.0950 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.100 U		0.110 U		0.0950 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		2.50 U		2.50 U
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100		1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		0.0250 U		0.0250 U
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19		1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200		2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022		0.0500 U		0.0500 U		0.0500 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-019	PR79-WT-020	PR79-WT-020	PR79-WT-021	PR79-WT-022	PR79-WT-022
			Sample ID	PR79-WT-019-SW-01-F	PR79-WT-020-SW-01	PR79-WT-020-SW-01-F	PR79-WT-021-SW-01	PR79-WT-022-SW-01	PR79-WT-022-SW-01-F
			Sampling Date	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	20-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**6130**		**3250**	**4650**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		**0.0350 J**	0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U			0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		300 U		300 U	**204 J**	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		0.500 U	0.500 U	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U	4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**7.55**		**6.19**	**5.98**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U	0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U	**0.0500 J**	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1560**		**811**	**1150**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U	**0.440 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.300 U		**0.130 J**	**0.160 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		10.0 U	**0.860 J**	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		100 U		**22.0 J**	80.0 U	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.260 J**		**0.0920 J**	**0.210 J**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**544**		**298**	**430**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**8.60**		**7.80**	**9.30**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.200 J**		**0.280 J**	1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		500 U	**573 J**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U	3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U	0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**3630**		**2570**	**2780**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U	0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		4.00 U	4.00 U	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		10.0 U	**3.40 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**171 J**		300 U			**191 J**
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	**0.0680 J**		0.500 U			0.500 U
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U			4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**7.27**		**6.87**			**6.18**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	**0.100 J**		0.200 U			0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0330 J**		0.200 U			0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1460**		**1450**			**1230**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U			**0.390 J**
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.160 J**		0.300			**0.110 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U			**0.650 J**
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**100**		100 U			80.0 U
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.260 J**		**0.250 J**			**0.200 J**
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**519**		**511**			**415**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**9.20**		**9.50**			**7.00**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**1.30 J**		**0.250 J**			1.20 U
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	1000 U		1000 U			**527 J**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U			3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U			0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**3230**		**3230**			**2840**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U			0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.340 J**		4.00 U			4.00 U
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.60 J**		10.0 U			**2.70 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.170 U		
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0930 U		0.0960 U		

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-019	PR79-WT-020	PR79-WT-020	PR79-WT-021	PR79-WT-022	PR79-WT-022
			Sample ID	PR79-WT-019-SW-01-F	PR79-WT-020-SW-01	PR79-WT-020-SW-01-F	PR79-WT-021-SW-01	PR79-WT-022-SW-01	PR79-WT-022-SW-01-F
			Sampling Date	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	20-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0930 U		0.0960 U		
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0930 U		0.0960 U		
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0930 U		0.0960 U		
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0930 U		0.0960 U		
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.0930 U		0.0960 U	**0.0790 J**	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0930 U		0.0960 U	**0.0940 J**	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0930 U		0.0960 U	**0.700 J**	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012		0.0930 U		0.0960 U	**0.120 J**	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038		**0.0490 J**		0.0960 U	**0.0460 J**	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.0930 U		0.0960 U	**0.500 J**	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0930 U		0.0960 U		
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0930 U		0.0960 U		
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0930 U		0.0960 U	**0.550 J**	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0930 U		0.0960 U		
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03		0.470 U		0.480 U	0.500 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0930 U		0.0960 U		
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0930 U		0.0960 U		
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U	0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U	0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U	0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U	0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071		0.0250 U		0.0250 U	0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U	0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U	0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U	0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7		0.500 U		0.500 U	0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U	2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U	2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		2.50 U	2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58		0.0250 U		0.0250 U	0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95		0.500 U		0.500 U	0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U	1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U	0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100		1.00 U		1.00 U	1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		0.0250 U	0.0250 U	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19		1.00 U		1.00 U	1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U	0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8		0.500 U		0.500 U	0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U	0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U	0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U	1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20		2.50 U		2.50 U	2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U	0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U	0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200		2.50 U		2.50 U	2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U	0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100		0.500 U		0.500 U	0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6		0.0250 U		0.0250 U	0.0250 U	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022		0.0500 U		0.0500 U	0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-023	PR79-WT-023	PR79-WT-024	PR79-WT-024	PR79-WT-025	PR79-WT-025
			Sample ID	PR79-WT-023-SW-01	PR79-WT-023-SW-01-F	PR79-WT-024-SW-01	PR79-WT-024-SW-01-F	PR79-WT-025-SW-01	PR79-WT-025-SW-01-F
			Sampling Date	05-May-20	05-May-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**5700**		**19200**		**10700**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 UJ		0.100 UJ	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 UJ		0.100 UJ
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**243 J**		300 U		300 U	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	**0.0710 J**		**0.0570 J**		0.500 U	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**8.96**		**19.0**		**11.6**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1480**		**5540**		**3000**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 UJ		4.00 UJ	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.480 J**		**0.120 J**		**0.220 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**0.920 J**		10.0 U		**0.910 J**	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**127**		**373**		**530**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	1.00 U		0.500 U		0.500 U	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**484**		**1300**		**777**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**23.8**		**22.4**		**22.5**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.200 J**		1.20 UJ		1.20 UJ	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**656 J**		**1290**		1000 U	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	**0.200 J**		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**10900**		**21300**		**13500**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		**0.550 J**		**0.340 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**7.61 J**		**3.70 J**		**4.70 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**255 J**		300 U		300 U
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		**0.160 J**		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**8.83**		**18.5**		**11.2**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0640 J**		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1440**		**5220**		**2950**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 UJ		4.00 UJ
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.510 J**		0.300 U		0.300 U
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**0.860 J**		**1.70 J**		**1.40 J**
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**112**		**128**		**223**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		1.00 U		0.500 UJ		0.500 UJ
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**494**		**1220**		**745**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**23.7**		**21.8**		**20.2**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.230 J**		1.20 UJ		**0.280 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**587 J**		**1260**		1000 U
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**10700**		**20600**		**13200**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		**0.260 J**		**0.270 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**6.40 J**		**3.80 J**		**5.20 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0940 U		0.0950 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-023	PR79-WT-023	PR79-WT-024	PR79-WT-024	PR79-WT-025	PR79-WT-025
			Sample ID	PR79-WT-023-SW-01	PR79-WT-023-SW-01-F	PR79-WT-024-SW-01	PR79-WT-024-SW-01-F	PR79-WT-025-SW-01	PR79-WT-025-SW-01-F
			Sampling Date	05-May-20	05-May-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0940 U		0.0950 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0940 U		0.0950 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0940 U		0.0950 U	
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		**0.0480 J**		0.0950 U	
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0940 U		0.0950 U	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		**0.100 J**		0.0950 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		**0.120 J**		0.0950 U	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0950 U		**0.0820 J**		0.0950 U	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0950 U		0.0940 U		0.0950 U	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0940 UJ		0.0950 UJ	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0940 U		0.0950 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0940 U		0.0950 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		**0.0950 J**		0.0950 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0940 U		0.0950 U	
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03	0.480 U		0.470 U		0.480 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0940 U		0.0950 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0940 U		0.0950 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		**0.0520 J**		**0.0620 J**	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 UJ		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-026	PR79-WT-026	PR79-WT-027	PR79-WT-027	PR79-WT-028	PR79-WT-028
			Sample ID	PR79-WT-026-SW-01	PR79-WT-026-SW-01-F	PR79-WT-027-SW-01	PR79-WT-027-SW-01-F	PR79-WT-028-SW-01	PR79-WT-028-SW-01-F
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**6740**		**8460**		**8050**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	100 U		100 U		100 U	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		0.500 U		0.500 U	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**5.54**		**4.23 J**		**6.35**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1730**		**2200**		**2090**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.300 U		0.300 U		0.300 U	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		**0.960 J**		10.0 U	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**102**		80.0 U		**115**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		0.500 U		0.500 U	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**586**		**722**		**690**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**3.20 J**		**1.80 J**		**6.90**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.210 J**		1.20 U		1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	500 U		500 U		500 U	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**5250**		**6080**		**6890**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.310 J**		**0.740 J**		**0.570 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.50 J**		**1.60 J**		**2.50 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**83.0 J**		**30.0 J**		**56.0 J**
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**5.41**		**3.95 J**		**6.15**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.110 J**		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1730**		**2220**		**2000**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.120 J**		0.300 U		**0.130 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.20 J**		10.0 U		**1.50 J**
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**92.1 J**		**18.0 J**		**89.5 J**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.100 J**		0.500 U		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**575**		**692**		**643**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**3.00 J**		**2.20 J**		**7.00**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.270 J**		1.20 U		**0.490 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**280 J**		**482 J**		**411 J**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**5130**		**5930**		**6520**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.640 J**		**0.660 J**		**0.600 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**3.10 J**		**3.60 J**		**3.70 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.180 U		0.180 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0980 U		0.100 U		0.0930 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-026	PR79-WT-026	PR79-WT-027	PR79-WT-027	PR79-WT-028	PR79-WT-028
			Sample ID	PR79-WT-026-SW-01	PR79-WT-026-SW-01-F	PR79-WT-027-SW-01	PR79-WT-027-SW-01-F	PR79-WT-028-SW-01	PR79-WT-028-SW-01-F
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0980 U		0.100 U		0.0930 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0980 U		0.100 U		0.0930 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0980 U		0.100 U		0.0930 U	
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0980 U		0.100 U		0.0930 U	
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0980 U		0.100 U		0.0930 U	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0980 U		0.100 U		0.0930 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0980 U		0.100 U		0.0930 U	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0980 U		0.100 U		0.0930 U	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0980 U		0.100 U		0.0930 U	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0980 UJ		0.100 UJ		0.0930 UJ	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0980 U		0.100 U		0.0930 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0980 U		0.100 U		0.0930 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0980 U		0.100 U		0.0930 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0980 U		0.100 U		0.0930 U	
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03	0.490 U		0.500 U		0.470 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0980 U		0.100 U		0.0930 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0980 U		0.100 U		0.0930 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		**2.30 J**		2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.130**		**0.0670 J**		**0.140**	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	**0.0120 J**		**0.100**		**0.0200 J**	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-029	PR79-WT-029	PR79-WT-030	PR79-WT-030	PR79-WT-031	PR79-WT-031
			Sample ID	PR79-WT-029-SW-01-F-R	PR79-WT-029-SW-01-R	PR79-WT-030-SW-01-F-R	PR79-WT-030-SW-01-R	PR79-WT-031-SW-01-F-R	PR79-WT-031-SW-01-R
			Sampling Date	14-May-20	14-May-20	14-May-20	14-May-20	14-May-20	14-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**7990**		**8860**		**9450**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 U		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		300 U		100 U		**468**
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		0.500 U		0.500 U		0.500 U
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**7.92**		**7.95**		**14.5**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		**0.100 J**
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0590 J**		**0.0730 J**		0.200
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1940**		**2320**		**2690**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U		4.00 U
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.230 J**		**0.300 J**		**0.410 J**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		10.0 U		10.0 U
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**381**		**115**		**444**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.480 J**		**0.130 J**		**1.23**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**763**		**745**		**661**
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**11.9**		**11.0**		**55.4**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		1.20 U		**0.290 J**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		500 U		1000 U
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**10100**		**7670**		**16500**
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		0.400 U		0.400 U		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.370 J**		4.00 U		**0.240 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		10.0 U		10.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	100 U		100 U		300 U	
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		0.500 U		0.500 U	
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**6.67**		**8.01**		**11.8**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1750**		**2410**		**2720**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.160 J**		**0.210 J**		**0.290 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		10.0 U	
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	80.0 U		80.0 U		**196**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.0820 J**		**0.0770 J**		**0.270 J**	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**708**		**756**		**656**	
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**7.90**		**10.0**		**44.4**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.450 J**		1.20 U		**0.280 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	1000 U		500 U		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**9460**		**7810**		**17000**	
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		4.00 U		4.00 U	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		10.0 U		10.0 U	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.170 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0940 U		0.0930 U		0.0940 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-029	PR79-WT-029	PR79-WT-030	PR79-WT-030	PR79-WT-031	PR79-WT-031
			Sample ID	PR79-WT-029-SW-01-F-R	PR79-WT-029-SW-01-R	PR79-WT-030-SW-01-F-R	PR79-WT-030-SW-01-R	PR79-WT-031-SW-01-F-R	PR79-WT-031-SW-01-R
			Sampling Date	14-May-20	14-May-20	14-May-20	14-May-20	14-May-20	14-May-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0940 U		0.0930 U		0.0940 U
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0940 U		0.0930 U		0.0940 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0940 U		0.0930 U		0.0940 U
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0940 U		0.0930 U		0.0940 U
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.0940 U		0.0930 U		0.0940 U
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0940 U		0.0930 U		0.0940 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0940 U		0.0930 U		0.0940 U
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012		0.0940 U		0.0930 U		0.0940 U
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038		0.0940 U		0.0930 U		0.0940 U
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012		0.0940 U		0.0930 U		0.0940 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0940 U		0.0930 U		0.0940 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0940 U		0.0930 U		0.0940 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012		0.0940 U		0.0930 U		0.0940 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0940 U		0.0930 U		0.0940 U
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03				0.470 U		
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0940 U		0.0930 U		0.0940 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0940 U		0.0930 U		0.0940 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		2.50 U		**7.30**
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100		1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		**0.130**		**0.0640 J**		**0.0330 J**
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19		1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200		2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022		0.0500 U		0.0500 U		0.0500 U

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-032	PR79-WT-032	PR79-WT-033	PR79-WT-033	PR79-WT-033	PR79-WT-033
			Sample ID	PR79-WT-032-SW-01	PR79-WT-032-SW-01-F	PR79-SW-FD04-01 (FD)	PR79-SW-FD04-01-F (FD)	PR79-WT-033-SW-01	PR79-WT-033-SW-01-F
			Sampling Date	04-May-20	04-May-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**8770**		**8590**		**8640**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14	**0.0650 J**		0.100 UJ		0.100 UJ	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.14		0.100 U		0.100 UJ		0.100 UJ
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**188 J**		300 U		300 U	
Antimony	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6	0.500 U		0.500 U		**0.120 J**	
Arsenic	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**13.8**		**11.4**		**11.4**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0330 J**		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2530**		**2430**		**2440**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.230 J**		**0.130 J**		**0.260 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**1.70 J**		10.0 U		10.0 U	
Iron	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300	**267**		**193**		**204**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		0.500 U		0.500 U	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**595**		**609**		**617**	
Manganese	Aqueous	USEPA NRWQC (Value for Water and Organism)	50	**46.3**		**28.6**		**28.6**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		1.20 U		1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**928 J**		1000 U		1000 U	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**14500**		**15100**		**15100**	
Thallium	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		**0.350 J**		**0.430 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**4.10 J**		**3.90 J**		**4.00 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**162 J**		300 U		300 U
Antimony, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	5.6		**0.160 J**		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	.018		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**13.2 J**		**10.7**		**10.8**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0590 J**		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2430 J**		**2380**		**2410**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.260 J**		**0.190 J**		**0.120 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.50 J**		10.0 U		10.0 U
Iron, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	300		**180 J**		**114**		**115**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		0.500 U		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**565**		**586**		**587**
Manganese, Dissolved	Aqueous	USEPA NRWQC (Value for Water and Organism)	50		**39.6 J**		**21.2**		**20.7**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		1.20 U		1.20 U
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**887 J**		1000 U		1000 U
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**13800 J**		**14600**		**14500**
Thallium, Dissolved	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.24		**0.150 J**		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		4.00 U		**0.380 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**4.90 J**		**3.30 J**		**5.10 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0940 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-032	PR79-WT-032	PR79-WT-033	PR79-WT-033	PR79-WT-033	PR79-WT-033
			Sample ID	PR79-WT-032-SW-01	PR79-WT-032-SW-01-F	PR79-SW-FD04-01 (FD)	PR79-SW-FD04-01-F (FD)	PR79-WT-033-SW-01	PR79-WT-033-SW-01-F
			Sampling Date	04-May-20	04-May-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0960 U		0.0940 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0960 U		0.0940 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 UJ		0.0960 U		0.0940 U	
Benzo(a)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0960 U		0.0940 U	
Benzo(a)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 UJ		0.0960 U		0.0940 U	
Benzo(b)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0960 U		0.0940 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0940 U	
Benzo(k)fluoranthene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.012	0.0950 U		0.0960 U		0.0940 U	
Chrysene	Aqueous	RIDEM Ambient Water Quality Criteria (Value for Water and Organism)	.038	0.0950 U		0.0960 U		0.0940 U	
Dibenz(a,h)anthracene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.00012	0.0950 U		0.0960 U		0.0940 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0960 U		0.0940 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0960 U		0.0940 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.0012	0.0950 U		0.0960 U		0.0940 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0960 U		0.0940 U	
Pentachlorophenol	Aqueous	USEPA NRWQC (Value for Water and Organism)	.03	0.480 UJ					
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0960 U		0.0940 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0960 U		0.0940 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.071	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	USEPA NRWQC (Value for Water and Organism)	.58	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.95	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous	USEPA Tapwater RSL (TR=1E-6; THQ=0.1)	2100	1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.0330 J**		**0.0190 J**		0.0250 U	
Chloromethane	Aqueous	Tapwater RSLs Alternate Compound Selectior	19	1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA NRWQC (Value for Water and Organism)	.8	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	20	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous	Tapwater RSLs Alternate Compound Selectior	200	2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA NRWQC (Value for Water and Organism)	100	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	USEPA NRWQC (Value for Water and Organism)	.6	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA NRWQC (Value for Water and Organism)	.022	0.0500 U		0.0500 U		0.0500 U	

Table A-10 Summary of Detected Analytical Results in Surface Water
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

Location	PR79-WT-032	PR79-WT-032	PR79-WT-033	PR79-WT-033	PR79-WT-033	PR79-WT-033
Sample ID	PR79-WT-032-SW-01	PR79-WT-032-SW-01-F	PR79-SW-FD04-01 (FD)	PR79-SW-FD04-01-F (FD)	PR79-WT-033-SW-01	PR79-WT-033-SW-01-F
Sampling Date	04-May-20	04-May-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001		PR79-WT-002			
			Sample ID	PR79-WT-001-PW-01	PR79-WT-001-PW-01-F	PR79-PW-FD04-01-0511 (FD)	PR79-PW-FD04-01-F-0511 (FD)	PR79-WT-002-PW-01	PR79-WT-002-PW-01-F
			Sampling Date	04-May-20	04-May-20	11-May-20	11-May-20	11-May-20	11-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**12600**		**22000**		**21400**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	**0.164 J**		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		**0.328**		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**476**		**576**		**556**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U		**0.0680 J**	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**11.1**		**9.27**		**9.14**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		**0.0490 J**		**0.0440 J**	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**3470**		**6230**		**6070**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.900 J**		**2.40 J**		**1.70 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.300 J**		1.00 U		1.00 U	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**0.660 J**		**1.70 J**		**1.00 J**	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**302**		**747**		**702**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		**0.160 J**		**0.250 J**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**944**		**1570**		**1520**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**11.0**		**21.4**		**20.8**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**3.13**		**0.800 J**	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**658 J**		**1950**		**1960**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**9400**		**11400**		**11200**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		4.00 U		4.00 U	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**1.50 J**		**3.40 J**		**3.00 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**387**		100 U		300 U
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		0.500 U		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**10.1**		**7.27**		**7.76**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**3410**		**6300**		**6400**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		**0.450 J**		**0.650 J**
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.340 J**		0.300 U		0.300 U
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.00 J**		**0.700 J**		**1.20 J**
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**274**		**75.4 J**		**143**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		**0.0970 J**		**0.0770 J**
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**838**		**1410**		**1450**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**9.80**		**11.0**		**11.8**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		**0.270 J**		**0.800 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**588 J**		**1900**		**1990**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**8970**		**11100**		**11400**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		4.00 U		4.00 U
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**2.20 J**		**1.50 J**		**2.20 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0940 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0960 U		0.0940 U	
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0960 U		0.0940 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001		PR79-WT-002			
			Sample ID	PR79-WT-001-PW-01	PR79-WT-001-PW-01-F	PR79-PW-FD04-01-0511 (FD)	PR79-PW-FD04-01-F-0511 (FD)	PR79-WT-002-PW-01	PR79-WT-002-PW-01-F
			Sampling Date	04-May-20	04-May-20	11-May-20	11-May-20	11-May-20	11-May-20
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0960 U		0.0940 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0940 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0960 U		0.0940 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0950 U		0.0960 U		0.0940 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0940 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0960 U		0.0940 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0940 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0940 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0960 U		0.0940 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0960 U		0.0940 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0940 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0960 U		0.0940 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 UJ		0.480 UJ		0.470 UJ	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0960 U		0.0940 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0960 U		0.0940 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	**4.40 J**		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		0.0250 U		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930	0.0500 U		0.0500 U		0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-003		PR79-WT-004		PR79-WT-005	
			Sample ID	PR79-WT-003-PW-01	PR79-WT-003-PW-01-F	PR79-WT-004-PW-01	PR79-WT-004-PW-01-F	PR79-WT-005-PW-01	PR79-WT-005-PW-01-F
			Sampling Date	11-May-20	11-May-20	08-May-20	08-May-20	05-May-20	05-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**10700**		**16600**		**9100**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**1490**		**6140**		**386**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U		0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**29.8**		**41.6**		**11.2**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	**0.130 J**		1.00 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		**0.0400 J**	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2800**		**4020**		**2540**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**2.40 J**		**4.80 J**		4.00 U	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**1.74**		**4.57**		**0.723 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**2.40 J**		10.0 U		**1.10 J**	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**2000**		**3780**		**428**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.700 J**		**1.60**		1.00 U	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**901**		**1590**		**668**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**386**		**122**		**152**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**1.80 J**		**6.92**		**0.880 J**	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**1280**		**2110**		**939 J**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		**0.190 J**	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		**0.130 J**		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**14000**		**5440**		**13400**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		10.0 U		**0.890 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**7.28 J**		**22.0**		**3.50 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**1110**		**187 J**		**201 J**
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.0690 J**		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**27.9**		**3.92 J**		**10.8**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.0870 J**		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		**0.0440 J**		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2730**		**3790**		**2690**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**1.20 J**		**0.850 J**		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**1.12**		**0.140 J**		**0.788 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.90 J**		**0.900 J**		10.0 U
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**1470**		**126**		**380**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.500 J**		0.500 U		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**800**		**964**		**666**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**357**		**5.90**		**164**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**1.20 J**		1.20 U		**1.00 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**1210**		**1410**		**1020**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**15000**		**5240**		**14100**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		**0.530 J**		**0.360 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**9.97 J**		**3.00 J**		**4.70 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.0950 U		0.0960 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0960 U		0.0950 U		0.0960 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-003		PR79-WT-004		PR79-WT-005	
			Sample ID	PR79-WT-003-PW-01	PR79-WT-003-PW-01-F	PR79-WT-004-PW-01	PR79-WT-004-PW-01-F	PR79-WT-005-PW-01	PR79-WT-005-PW-01-F
			Sampling Date	11-May-20	11-May-20	08-May-20	08-May-20	05-May-20	05-May-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0960 U		0.0950 U		0.0960 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0960 U		0.0950 U		0.0960 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.0950 U		0.0960 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0960 U		0.0950 U		0.0960 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0960 U		0.0950 U		0.0960 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.0950 U		0.0960 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	**0.0550 J**		0.0950 U		0.0960 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	**0.0370 J**		0.0950 U		0.0960 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.0950 U		0.0960 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0960 U		0.0950 U		0.0960 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0960 U		0.0950 U		0.0960 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.0950 U		0.0960 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0960 U		0.0950 U		0.0960 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 UJ		0.480 U		0.480 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0960 U		0.0950 U		0.0960 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0960 U		0.0950 U		0.0960 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.0180 J**		0.0250 U		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-003		PR79-WT-004		PR79-WT-005	
			Sample ID	PR79-WT-003-PW-01	PR79-WT-003-PW-01-F	PR79-WT-004-PW-01	PR79-WT-004-PW-01-F	PR79-WT-005-PW-01	PR79-WT-005-PW-01-F
			Sampling Date	11-May-20	11-May-20	08-May-20	08-May-20	05-May-20	05-May-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L 14		0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic 558		0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L 43		0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic 930		0.0500 U		0.0500 U		0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-006		PR79-WT-007		PR79-WT-008	
			Sample ID	PR79-WT-006-PW-01	PR79-WT-006-PW-01-F	PR79-WT-007-PW-01	PR79-WT-007-PW-01-F	PR79-WT-008-PW-01	PR79-WT-008-PW-01-F
			Sampling Date	05-May-20	05-May-20	21-May-20	21-May-20	14-May-20	14-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**8420**		**13800**		**11400**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		**0.0160 J**		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		**0.0150 J**		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**343**		**2500**		300 U	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	**0.130 J**		**0.0740 J**		0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**14.8**		**29.2**		**23.8**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0310 J**		**0.160 J**		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2440**		**3730**		**3310**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.830 J**		**3.10 J**		4.00 U	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.550 J**		**4.38**		1.00 U	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**1.10 J**		**2.40 J**		10.0 U	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**256**		**2230**		**150**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**2.00**		**1.15**		**1.33**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**563**		**1090**		**770**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**62.3**		**111**		**44.2**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**1.63 J**		**2.43**		1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**910 J**		**1220**		1000 U	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		**0.350 J**		3.00	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		**0.0660 J**		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**13700**		**11000**		**10000**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		**0.0660 J**		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.920 J**		**4.14 J**		**0.910 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**3.10 J**		10.0 U		10.0 U	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**189 J**		**217 J**		**97.0 J**
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.130 J**		**0.0650 J**		**0.0720 J**
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**12.8**		**15.2**		**23.7**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0320 J**		**0.0850 J**		**0.0310 J**
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2340**		**3360**		**3370**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		**0.530 J**		**0.490 J**
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.470 J**		**3.42**		1.00 U
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.10 J**		**1.40 J**		10.0 U
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**146**		**1380**		80.0 U
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**1.53**		0.500 U		**1.11**
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**517**		**742**		**758**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**55.8**		**99.0**		**45.0**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**1.10 J**		**2.21**		1.20 U
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**874 J**		1000 U		**1080**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**13200**		**10200**		**10300**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.850 J**		**0.970 J**		**0.520 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**3.70 J**		10.0 U		10.0 U
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.180 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0970 U		0.100 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0970 U		0.100 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-006		PR79-WT-007		PR79-WT-008	
			Sample ID	PR79-WT-006-PW-01	PR79-WT-006-PW-01-F	PR79-WT-007-PW-01	PR79-WT-007-PW-01-F	PR79-WT-008-PW-01	PR79-WT-008-PW-01-F
			Sampling Date	05-May-20	05-May-20	21-May-20	21-May-20	14-May-20	14-May-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0970 U		0.100 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0970 UJ		0.100 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0970 U		0.100 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0970 UJ		0.100 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0950 U		0.0970 U		0.100 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0970 U		0.100 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0970 U		0.100 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0970 U		0.100 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0970 U		0.100 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0970 U		0.100 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0970 U		0.100 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0970 U		0.100 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0970 U		0.100 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 U		0.480 U		0.500 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0970 U		0.100 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0970 U		0.100 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	**2.20 J**		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.0280 J**		**0.0300 J**		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-006		PR79-WT-007		PR79-WT-008	
			Sample ID	PR79-WT-006-PW-01	PR79-WT-006-PW-01-F	PR79-WT-007-PW-01	PR79-WT-007-PW-01-F	PR79-WT-008-PW-01	PR79-WT-008-PW-01-F
			Sampling Date	05-May-20	05-May-20	21-May-20	21-May-20	14-May-20	14-May-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L 14		0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic 558		0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L 43		0.0250 U		**0.0230 J**		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic 930		0.0500 U		0.0500 U		0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009		PR79-WT-010				PR79-WT-011
			Sample ID	PR79-WT-009-PW-01	PR79-WT-009-PW-01-F	PR79-PW-FD03-01 (FD)	PR79-PW-FD03-01-F (FD)	PR79-WT-010-PW-01	PR79-WT-010-PW-01-F	PR79-WT-011-PW-01
			Sampling Date	19-May-20	19-May-20	12-May-20	12-May-20	12-May-20	12-May-20	12-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
Hardness (as CaCO3)	Aqueous			**6890**		**5040**		**5190**		**8080**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		0.100 U		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**219 J**		**404**		**423**		**4050**
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	**0.120 J**		**0.150 J**		**0.490 J**		**0.0820 J**
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**8.22**		**6.41**		**6.23**		**25.2**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		**0.0690 J**		0.200 U		**0.130 J**
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0760 J**		**0.0680 J**		**0.0520 J**		**0.0850 J**
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1790**		**1270**		**1310**		**1640**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.700 J**		**0.400 J**		**1.40 J**		**5.23 J**
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.250 J**		**0.210 J**		**0.220 J**		**1.20**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**1.20 J**		10.0 U		10.0 U		10.0 U
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**34.0 J**		**64.5 J**		100 U		**2670**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		**0.160 J**		**0.300 J**		**2.33**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**588**		**455**		**468**		**967**
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**6.40**		**14.8**		**17.4**		**25.5**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.360 J**		**0.540 J**		1.20 U		**3.91**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	1000 U		**791 J**		1000 U		1000 U
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	**0.300 J**		**0.220 J**		3.00 U		**0.260 J**
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**4600**		**3530**		**3700**		**3310**
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	**0.0890 J**		0.400 U		**0.0630 J**		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.380 J**		**0.230 J**		4.00 U		**5.71 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		**2.20 J**		**2.70 J**		**7.48 J**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**150 J**		**377**		**376**	
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.0580 J**		**0.0620 J**		**0.0660 J**	
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**7.18**		**6.40**		**5.79**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0690 J**		**0.0360 J**		0.200 U	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1780**		**1210**		**1280**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**0.530 J**		4.00 U		**0.480 J**	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.180 J**		**0.180 J**		**0.180 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.00 J**		10.0 U		10.0 U	
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		80.0 U		**54.1 J**		80.0 U	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		**0.150 J**		**0.160 J**	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**590**		**438**		**449**	
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**5.40**		**13.9**		**13.5**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.210 J**		**0.600 J**		1.20 U	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		**718 J**		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**4440**		**3350**		**3400**	
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.590 J**		4.00 U		4.00 U	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		**2.40 J**		**3.40 J**	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.180 U		0.250 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.100 U		0.140 U		0.0970 U
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0960 U		0.100 U		0.140 U		0.0970 U
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0960 U		0.100 U		0.140 U		0.0970 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0960 U		0.100 U		0.140 U		0.0970 U
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.100 U		0.140 U		0.0970 U
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0960 U		0.100 U		0.140 U		0.0970 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009		PR79-WT-010				PR79-WT-011
			Sample ID	PR79-WT-009-PW-01	PR79-WT-009-PW-01-F	PR79-PW-FD03-01 (FD)	PR79-PW-FD03-01-F (FD)	PR79-WT-010-PW-01	PR79-WT-010-PW-01-F	PR79-WT-011-PW-01
			Sampling Date	19-May-20	19-May-20	12-May-20	12-May-20	12-May-20	12-May-20	12-May-20
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0960 U		0.100 U		0.140 U		0.0970 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.100 U		0.140 U		0.0970 U
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0960 U		0.100 U		0.140 U		0.0970 U
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.100 U		0.140 U		0.0970 U
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.100 U		0.140 U		0.0970 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0960 U		0.100 U		0.140 U		0.0970 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0960 U		0.100 U		0.140 U		0.0970 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.100 U		0.140 U		0.0970 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0960 U		0.100 U		0.140 U		0.0970 U
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 U		0.500 UJ		0.690 UJ		0.480 UJ
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0960 U		0.100 U		0.140 U		0.0970 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0960 U		0.100 U		0.140 U		0.0970 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**							
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U		**9.70**
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		0.0250 U		0.0250 U		0.0250 U
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U		0.500 U
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558	0.500 U		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43	0.0250 U		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930	0.0500 U		0.0500 U		0.0500 U		0.0500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-011	PR79-WT-012		PR79-WT-013		PR79-WT-014
			Sample ID	PR79-WT-011-PW-01-F	PR79-WT-012-PW-01	PR79-WT-012-PW-01-F	PR79-WT-013-PW-01	PR79-WT-013-PW-01-F	PR79-WT-014-PW-01
			Sampling Date	12-May-20	19-May-20	19-May-20	19-May-20	19-May-20	06-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**5750**		**38100**		**19700**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U		**0.0230 J**
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**1140**		**12200**		**1160**
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.0620 J**		**0.110 J**		**0.0780 J**
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**11.4**		**108**		**19.4**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		1.00 U		**0.0940 J**
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.150 J**		**0.100 J**		0.200 U
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1410**		**8840**		**5680**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**1.80 J**		**10.7**		**0.800 J**
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.570 J**		**3.53**		**1.00**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**2.30 J**		**3.20 J**		10.0 U
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**918**		**7810**		**1020**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		1.00 U		**5.44**		**1.56**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**542**		**3880**		**1340**
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**11.7**		**99.4**		**61.8**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.530 J**		**5.30**		**1.20 J**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		1000 U		**3330**		**1520**
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		**0.300 J**		**0.380 J**		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		**0.0690 J**		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**3380**		**7280**		**3780**
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		**0.180 J**		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**2.10 J**		**18.8**		**2.10 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		20.0 U		**3.00 J**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**824**		**584**		**366**	
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		**0.0900 J**		**0.0760 J**	
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**9.21**		**7.41**		**15.3**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0440 J**		0.200 U		0.200 U	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1350**		**1400**		**6600**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.780 J**		**0.720 J**		**0.510 J**	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.540 J**		**0.460 J**		**0.580 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		**1.50 J**		**1.40 J**	
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**955**		**593**		**302**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.650 J**		1.00 U		**1.09**	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**488**		**439**		**1530**	
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**8.60**		**8.20**		**24.9**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**0.260 J**		**0.270 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	1000 U		1000 U		**1230**	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		**0.220 J**		**0.190 J**	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**3020**		**3340**		**5620**	
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**1.20 J**		**1.30 J**		**1.60 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**4.80 J**		10.0 U		10.0 U	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.170 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0970 U		0.0930 U		0.0960 U
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0970 U		0.0930 U		0.0960 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-011	PR79-WT-012		PR79-WT-013		PR79-WT-014
			Sample ID	PR79-WT-011-PW-01-F	PR79-WT-012-PW-01	PR79-WT-012-PW-01-F	PR79-WT-013-PW-01	PR79-WT-013-PW-01-F	PR79-WT-014-PW-01
			Sampling Date	12-May-20	19-May-20	19-May-20	19-May-20	19-May-20	06-May-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0970 U		0.0930 U		0.0960 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0970 U		0.0930 U		0.0960 U
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0970 U		0.0930 U		0.0960 U
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0970 U		0.0930 U		0.0960 U
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6		0.0970 U		0.0930 U		0.0960 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0970 U		0.0930 U		0.0960 U
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0970 U		0.0930 U		0.0960 U
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0970 U		0.0930 U		0.0960 U
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0970 U		0.0930 U		0.0960 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0970 U		0.0930 U		0.0960 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0970 U		0.0930 U		0.0960 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0970 U		0.0930 U		0.0960 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0970 U		0.0930 U		0.0960 U
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021		0.480 U		0.470 U		0.480 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0970 U		0.0930 U		0.0960 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0970 U		0.0930 U		0.0960 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		**4.10 J**		2.50 U
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous				1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		0.0250 U		0.0250 U
Chloromethane	Aqueous				1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous				2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-011	PR79-WT-012		PR79-WT-013		PR79-WT-014
			Sample ID	PR79-WT-011-PW-01-F	PR79-WT-012-PW-01	PR79-WT-012-PW-01-F	PR79-WT-013-PW-01	PR79-WT-013-PW-01-F	PR79-WT-014-PW-01
			Sampling Date	12-May-20	19-May-20	19-May-20	19-May-20	19-May-20	06-May-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		**1.10**		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43		0.0250 U		**0.0300 J**		0.0250 U
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930		0.0500 U		0.0500 U		0.0500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-014	PR79-WT-015		PR79-WT-016		PR79-WT-017
			Sample ID	PR79-WT-014-PW-01-F	PR79-WT-015-PW-01	PR79-WT-015-PW-01-F	PR79-WT-016-PW-01	PR79-WT-016-PW-01-F	PR79-WT-017-PW-01
			Sampling Date	06-May-20	06-May-20	06-May-20	21-May-20	21-May-20	21-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**59000**		**8900**		**4690**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**3990**		**4240**		**475**
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		0.500 U		0.500 U		0.500 U
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**57.1**		**35.6**		**11.8**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.140 J**		1.00 U		0.200 U
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		**0.0540 J**		0.200 U
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**14200**		**1380**		**1220**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**9.80 J**		**4.22 J**		**1.40 J**
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**2.07**		**1.66**		**0.460 J**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**0.880 J**		**1.20 J**		**3.20 J**
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**3310**		**2330**		**192**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**1.42**		**1.46**		**2.63**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**5750**		**1330**		**403**
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**47.4**		**105**		**12.6**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**3.56**		**2.19**		**0.460 J**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**2320**		**1470**		**1160**
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		**0.0690 J**		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**8300**		**2990**		**5480**
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		**0.0770 J**		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**10.0**		**5.57 J**		**0.760 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**11.0 J**		10.0 U		10.0 U
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**79.0 J**		**86.0 J**		**140 J**	
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		**0.0570 J**		0.500 U	
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**15.9**		**23.8**		**10.8**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		**0.0500 J**		0.200 U	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**5740**		**12900**		**1240**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	4.00 U		4.00 U		4.00 U	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.170 J**		**0.180 J**		**0.200 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		**1.40 J**	
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	80.0 U		**122**		**31.0 J**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.100 J**		**0.120 J**		0.500 U	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**1270**		**4230**		**513**	
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**17.9**		**6.90**		**37.9**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.730 J**		**0.270 J**		**0.410 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**1530**		**1550**		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**3740**		**7730**		**2840**	
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		**2.36 J**		**0.430 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.00 J**		**1.80 J**		10.0 U	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.180 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0960 U		0.0980 U		0.0960 U
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0960 U		0.0980 U		0.0960 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-014	PR79-WT-015		PR79-WT-016		PR79-WT-017
			Sample ID	PR79-WT-014-PW-01-F	PR79-WT-015-PW-01	PR79-WT-015-PW-01-F	PR79-WT-016-PW-01	PR79-WT-016-PW-01-F	PR79-WT-017-PW-01
			Sampling Date	06-May-20	06-May-20	06-May-20	21-May-20	21-May-20	21-May-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0960 U		0.0980 U		0.0960 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0960 U		0.0980 UJ		0.0960 UJ
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0960 U		0.0980 U		0.0960 U
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0960 U		0.0980 UJ		0.0960 UJ
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6		0.0960 U		0.0980 U		0.0960 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0960 U		0.0980 U		0.0960 U
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0960 U		0.0980 U		0.0960 U
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0960 U		0.0980 U		0.0960 U
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0960 U		0.0980 U		0.0960 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0960 U		0.0980 U		0.0960 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0960 U		0.0980 U		0.0960 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0960 U		0.0980 U		0.0960 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0960 U		0.0980 U		0.0960 U
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021		0.480 U		0.490 U		0.480 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0960 U		0.0980 U		0.0960 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0960 U		0.0980 U		0.0960 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		2.50 U		2.50 U
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous				1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		**0.0210 J**		0.0250 U
Chloromethane	Aqueous				1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous				2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-014	PR79-WT-015		PR79-WT-016		PR79-WT-017
			Sample ID	PR79-WT-014-PW-01-F	PR79-WT-015-PW-01	PR79-WT-015-PW-01-F	PR79-WT-016-PW-01	PR79-WT-016-PW-01-F	PR79-WT-017-PW-01
			Sampling Date	06-May-20	06-May-20	06-May-20	21-May-20	21-May-20	21-May-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930		0.0500 U		0.0500 U		0.0500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018				PR79-WT-019
			Sample ID	PR79-WT-017-PW-01-F	PR79-PW-FD01-01 (FD)	PR79-PW-FD01-01-F (FD)	PR79-WT-018-PW-01	PR79-WT-018-PW-01-F	PR79-WT-019-PW-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	06-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**6190 J**		**9180 J**		**32700**
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		**0.0300 J**		0.100 U
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		0.100 U	
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**2460 J**		**6730 J**		**874**
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.0560 J**		**0.0830 J**		**0.0600 J**
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**20.8 J**		**42.1 J**		**22.5**
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.0920 J**		**0.300 J**		**0.0940 J**
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		**0.0640 J**		0.200 U
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**1200**		**1440**		**8860**
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**3.00 J**		**7.68 J**		**1.60 J**
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.973 J**		**2.22 J**		**1.08**
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.20 J**		**3.70 J**		10.0 U
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**1200 J**		**3240 J**		**878**
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**2.45 J**		**7.77 J**		**0.350 J**
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**772 J**		**1360 J**		**2560**
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**42.1 J**		**64.5 J**		**48.1**
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**1.40 J**		**3.71 J**		**0.880 J**
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**1050**		**1630**		**2420**
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		**0.280 J**		3.00 U
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		**0.0650 J**		0.400 U
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**3390**		**3560**		**6190**
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		**0.0840 J**		0.400 U
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**4.05 J**		**10.4**		**2.82 J**
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**5.30 J**		**12.0 J**		**3.50 J**
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**239 J**		**245 J**		**243 J**	
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U		0.500 U	
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**8.43**		**8.66**		**7.94**	
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		**0.0450 J**		**0.0720 J**	
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		**0.0420 J**		**0.0400 J**	
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**1180**		**1070**		**1060**	
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.490 J**		4.00 U		4.00 U	
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.310 J**		**0.390 J**		**0.440 J**	
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**1.60 J**		10.0 U		10.0 U	
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**96.0 J**		**146**		**138**	
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	1.00 U		**0.430 J**		**0.500 J**	
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**371**		**462**		**453**	
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**10.0**		**30.9**		**30.0**	
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**0.450 J**		**0.300 J**	
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**1110**		1000 U		1000 U	
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**5260**		**3220**		**3210**	
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**0.560 J**		**0.630 J**		**0.540 J**	
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		**2.40 J**		**3.10 J**	
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.170 U		0.170 U
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0950 U		0.0940 U		0.0960 U
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0950 U		0.0940 U		0.0960 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018				PR79-WT-019
			Sample ID	PR79-WT-017-PW-01-F	PR79-PW-FD01-01 (FD)	PR79-PW-FD01-01-F (FD)	PR79-WT-018-PW-01	PR79-WT-018-PW-01-F	PR79-WT-019-PW-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	06-May-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0950 U		0.0940 U		0.0960 U
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0950 U		0.0940 U		0.0960 U
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0950 U		0.0940 U		0.0960 U
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0950 U		0.0940 U		0.0960 U
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6		0.0950 U		0.0940 U		0.0960 U
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0950 U		0.0940 U		0.0960 U
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0950 U		0.0940 U		0.0960 U
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0950 U		0.0940 U		0.0960 U
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0950 U		0.0940 U		0.0960 U
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0950 U		0.0940 U		0.0960 U
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0950 U		0.0940 U		0.0960 U
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0950 U		0.0940 U		0.0960 U
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0950 U		0.0940 U		0.0960 U
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021		0.480 U		0.470 U		0.480 U
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0950 U		0.0940 U		0.0960 U
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0950 U		0.0940 U		0.0960 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U		0.500 U
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U		0.500 U
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U		0.500 U
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7		0.0250 U		0.0250 U		0.0250 U
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U		0.500 U
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U		0.500 U
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7		0.500 U		0.500 U		0.500 U
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U		2.50 U
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U		2.50 U
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		2.50 U		**2.30 J**		2.50 U
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9		0.0250 U		0.0250 U		0.0250 U
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340		0.500 U		0.500 U		0.500 U
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U		1.00 U
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U		0.500 U
Chloroethane	Aqueous				1.00 U		1.00 U		1.00 U
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		0.0250 U		0.0250 U
Chloromethane	Aqueous				1.00 U		1.00 U		1.00 U
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U		0.500 U
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320		0.500 U		0.500 U		0.500 U
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U		0.500 U
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U		0.500 U
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U		1.00 U
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214		2.50 U		2.50 U		2.50 U
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U		0.500 U
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U		0.500 U
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U
tert-Butyl alcohol	Aqueous				2.50 U		2.50 U		2.50 U
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U		0.500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018				PR79-WT-019
			Sample ID	PR79-WT-017-PW-01-F	PR79-PW-FD01-01 (FD)	PR79-PW-FD01-01-F (FD)	PR79-WT-018-PW-01	PR79-WT-018-PW-01-F	PR79-WT-019-PW-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	06-May-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14		0.500 U		0.500 U		0.500 U
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558		0.500 U		0.500 U		0.500 U
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43		0.0250 U		0.0250 U		0.0250 U
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930		0.0500 U		0.0500 U		0.0500 U

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-019	PR79-WT-020		PR79-WT-021	PR79-WT-022	
			Sample ID	PR79-WT-019-PW-01-F	PR79-WT-020-PW-01	PR79-WT-020-PW-01-F	PR79-WT-021-PW-01	PR79-WT-022-PW-01	PR79-WT-022-PW-01-F
			Sampling Date	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	20-May-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous				**15200**		**4740**	**4810**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U	0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U			0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**2870**		**906**	**342**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		0.500 U		0.500 U	0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U	4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**29.3**		**10.5**	**10.5**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U	0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U	**0.0320 J**	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**3810**		**1100**	**1130**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U	**0.680 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**2.96**		**1.00**	**0.470 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		10.0 U	10.0 U	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**1940**		**847**	**301**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**2.34**		**1.72**	**0.240 J**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**1390**		**488**	**484**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**310**		**56.0**	**41.8**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**3.25**		**0.600 J**	1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**1530**		**410 J**	**632 J**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U	3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U	0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**4200**		**2540**	**2790**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U	0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		10.0 U		**2.00 J**	4.00 U	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		10.0 U	**2.40 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**350**		300 U			**195 J**
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U			0.500 U
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U			4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**17.5**		**9.01**			**7.81**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U			0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U			0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**8740**		**3250**			**1060**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.560 J**		4.00 U			4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.300 J**		1.00			**0.320 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U			**0.870 J**
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**338**		**246**			80.0 U
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**0.110 J**		**1.03**			**0.170 J**
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**2460**		**853**			**390**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**11.0**		**45.3**			**26.2**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.520 J**		**1.40 J**			**0.210 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**2260**		**1090**			**524 J**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U			3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U			0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**5950**		**3660**			**2560**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U			0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**1.80 J**		4.00 U			4.00 U
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.90 J**		10.0 U			**4.20 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		0.170 U		0.180 U	0.180 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0970 U		0.100 U	0.100 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9		0.0970 U		0.100 U	0.100 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-019	PR79-WT-020		PR79-WT-021	PR79-WT-022	
			Sample ID	PR79-WT-019-PW-01-F	PR79-WT-020-PW-01	PR79-WT-020-PW-01-F	PR79-WT-021-PW-01	PR79-WT-022-PW-01	PR79-WT-022-PW-01-F
			Sampling Date	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	20-May-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13		0.0970 U		0.100 U	0.100 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02		0.0970 U		0.100 U	0.100 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0970 U		0.100 U	0.100 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0970 U		0.100 U	0.100 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6		0.0970 U		0.100 U	0.100 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0970 U		0.100 U	0.100 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.0970 U		0.100 U	0.100 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7		0.0970 U		0.100 U	0.100 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0970 U		0.100 U	0.100 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8		0.0970 U		0.100 U	0.100 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		0.0970 U		0.100 U	0.100 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012		0.0970 U		0.100 U	0.100 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6		0.0970 U		0.100 U	0.100 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021		0.480 U		0.510 U	0.520 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3		0.0970 U		0.100 U	0.100 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6		0.0970 U		0.100 U	0.100 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76		0.500 U		0.500 U	0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410		0.500 U		0.500 U	0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13		0.500 U		0.500 U	0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8		0.0250 U		0.0250 U	0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7		0.0250 U		0.0250 U	0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U	0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8		0.500 U		0.500 U	0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26		0.500 U		0.500 U	0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7		0.500 U		0.500 U	0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000		2.50 U		2.50 U	2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170		2.50 U		2.50 U	2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700		**3.10 J**		2.50 U	2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9		0.0250 U		0.0250 U	0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340		0.500 U		0.500 U	0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		1.00 U		1.00 U	1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15		0.500 U		0.500 U	0.500 U	
Chloroethane	Aqueous				1.00 U		1.00 U	1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32		0.0250 U		0.0250 U	0.0250 U	
Chloromethane	Aqueous				1.00 U		1.00 U	1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620		0.500 U		0.500 U	0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320		0.500 U		0.500 U	0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36		0.500 U		0.500 U	0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8		0.500 U		0.500 U	0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		1.00 U		1.00 U	1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214		2.50 U		2.50 U	2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3		0.500 U		0.500 U	0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16		0.500 U		0.500 U	0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	
tert-Butyl alcohol	Aqueous				2.50 U		2.50 U	2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9		0.500 U		0.500 U	0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-019	PR79-WT-020		PR79-WT-021	PR79-WT-022	
			Sample ID	PR79-WT-019-PW-01-F	PR79-WT-020-PW-01	PR79-WT-020-PW-01-F	PR79-WT-021-PW-01	PR79-WT-022-PW-01	PR79-WT-022-PW-01-F
			Sampling Date	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	20-May-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L 14			0.500 U		0.500 U	0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic 558			0.500 U		0.500 U	0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L 43			0.0250 U		0.0250 U	0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic 930			0.0500 U		0.0500 U	0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-023		PR79-WT-024		PR79-WT-025	
			Sample ID	PR79-WT-023-PW-01	PR79-WT-023-PW-01-F	PR79-WT-024-PW-01	PR79-WT-024-PW-01-F	PR79-WT-025-PW-01	PR79-WT-025-PW-01-F
			Sampling Date	05-May-20	05-May-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**45800**		**46100**		**26500**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 UJ		0.100 UJ	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 UJ		0.100 UJ
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**708**		**3310**		**621**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U		0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**30.4**		**33.4**		**10.6**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0850 J**		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**14600**		**13200**		**7600**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.410 J**		**2.50 J**		**0.820 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.794 J**		**0.878 J**		**0.240 J**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		**1.50 J**		**1.50 J**	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**623**		**1440**		**933**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		1.00 U		**1.72**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**2260**		**3190**		**1820**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**68.2**		**23.1**		**4.60 J**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**0.460 J**		2.00 UJ		1.20 UJ	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**2650**		**2970**		**1510**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**58900**		**29800**		**12000**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**1.10 J**		**3.51 J**		**1.20 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**2.60 J**		**5.70 J**		**1.90 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**32.0 J**		300 U		100 U
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.260 J**		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**26.7**		**13.4**		**7.49**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0510 J**		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**14000**		**12500**		**7520**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 UJ		4.00 UJ
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.0910 J**		0.300 U		0.300 U
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		**1.40 J**		**0.690 J**
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		80.0 U		80.0 U		**868**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**1.17**		0.500 UJ		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**2080**		**2720**		**1770**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**2.90 J**		**6.60**		**3.90 J**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		**0.420 J**		**0.340 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**2470**		**2510**		**1500**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**57300**		**28300**		**12400**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		**0.0850 J**		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		**0.350 J**		**0.460 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**0.880 J**		**2.50 J**		**1.70 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.180 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0980 U		0.0950 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0980 U		0.0950 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-023		PR79-WT-024		PR79-WT-025	
			Sample ID	PR79-WT-023-PW-01	PR79-WT-023-PW-01-F	PR79-WT-024-PW-01	PR79-WT-024-PW-01-F	PR79-WT-025-PW-01	PR79-WT-025-PW-01-F
			Sampling Date	05-May-20	05-May-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0980 U		0.0950 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0980 U		0.0950 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0980 U		0.0950 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 UJ		0.0980 U		0.0950 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0950 UJ		0.0980 U		0.0950 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 UJ		0.0980 U		0.0950 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0980 U		0.0950 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0980 U		0.0950 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 UJ		0.0980 UJ		0.0950 UJ	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0980 U		0.0950 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0980 U		0.0950 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 UJ		0.0980 U		0.0950 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0980 U		0.0950 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 U		0.490 U		0.480 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0980 U		0.0950 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0980 U		0.0950 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.0240 J**		0.0250 U		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-023		PR79-WT-024		PR79-WT-025	
			Sample ID	PR79-WT-023-PW-01	PR79-WT-023-PW-01-F	PR79-WT-024-PW-01	PR79-WT-024-PW-01-F	PR79-WT-025-PW-01	PR79-WT-025-PW-01-F
			Sampling Date	05-May-20	05-May-20	28-Apr-20	28-Apr-20	28-Apr-20	28-Apr-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930	0.0500 U		0.0500 U		0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-026		PR79-WT-027		PR79-WT-028	
			Sample ID	PR79-WT-026-PW-01	PR79-WT-026-PW-01-F	PR79-WT-027-PW-01	PR79-WT-027-PW-01-F	PR79-WT-028-PW-01	PR79-WT-028-PW-01-F
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**17900**		**11500**		**10300**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		0.100 U	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**3230**		**697**		**1530**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U		0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**21.4**		**5.65**		**14.7**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	1.00 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**4360**		**3020**		**2410**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**8.27 J**		**2.60 J**		**0.800 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**1.04**		1.00 U		1.00 U	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**2.00 J**		**0.700 J**		**2.40 J**	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**2030**		**2870**		**606**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	**1.10**		0.500 U		1.00 U	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**1700**		**961**		**1030**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**27.8**		**8.90**		**16.3**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**6.32**		**2.42**		**1.62 J**	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**1050**		500 U		500 U	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**8300**		**7400**		**6510**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**4.97 J**		**1.40 J**		**1.30 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**6.90 J**		**2.80 J**		**3.20 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**140 J**		**247 J**		**226 J**
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		0.500 U		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**6.66**		**5.16**		**9.65**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		**0.0560 J**		**0.110 J**		**0.140 J**
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		**0.0310 J**
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**3840**		**3000**		**2460**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.310 J**		**0.734 J**		**0.420 J**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**1.20 J**		10.0 U		10.0 U
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**285**		**2590**		**102**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		**0.0840 J**		**0.190 J**		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**1080**		**932**		**901**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**4.40 J**		**5.80**		**11.0**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**0.780 J**		**0.470 J**		**0.510 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**539 J**		**190 J**		**310 J**
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**7690**		**7310**		**6420**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**0.810 J**		**0.280 J**		**0.280 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**2.90 J**		**3.60 J**		**3.70 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.180 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0990 U		0.0940 U		0.0940 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0990 U		0.0940 U		0.0940 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-026		PR79-WT-027		PR79-WT-028	
			Sample ID	PR79-WT-026-PW-01	PR79-WT-026-PW-01-F	PR79-WT-027-PW-01	PR79-WT-027-PW-01-F	PR79-WT-028-PW-01	PR79-WT-028-PW-01-F
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0990 U		0.0940 U		0.0940 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0990 U		0.0940 U		0.0940 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0990 U		0.0940 U		0.0940 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0990 U		0.0940 U		0.0940 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0990 U		0.0940 U		0.0940 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0990 U		0.0940 U		0.0940 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0990 U		0.0940 U		**0.0650 J**	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0990 U		0.0940 U		0.0940 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0990 UJ		0.0940 UJ		0.0940 UJ	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0990 U		0.0940 U		0.0940 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0990 U		0.0940 U		0.0940 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0990 U		0.0940 U		0.0940 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0990 U		0.0940 U		0.0940 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.500 U		0.470 U		0.470 U	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0990 U		0.0940 U		0.0940 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0990 U		0.0940 U		0.0940 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	**4.80 J**		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		0.0250 U		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-026		PR79-WT-027		PR79-WT-028	
			Sample ID	PR79-WT-026-PW-01	PR79-WT-026-PW-01-F	PR79-WT-027-PW-01	PR79-WT-027-PW-01-F	PR79-WT-028-PW-01	PR79-WT-028-PW-01-F
			Sampling Date	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930	0.0500 U		0.0500 U		0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-029		PR79-WT-030		PR79-WT-031	
			Sample ID	PR79-WT-029-PW-01	PR79-WT-029-PW-01-F	PR79-WT-030-PW-01	PR79-WT-030-PW-01-F	PR79-WT-031-PW-01	PR79-WT-031-PW-01-F
			Sampling Date	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**13700**		**11000**		**26400**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 U		**0.0200 J**	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 U		0.100 U
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**1140**		**1920**		**24600**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		0.500 U		0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**9.03**		**15.5**		**73.5**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	1.00 U		1.00 U		1.00 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	**0.0650 J**		**0.0540 J**		**0.0940 J**	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**3370**		**2670**		**5250**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.920 J**		**2.00 J**		**29.4**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**1.89**		**0.510 J**		**3.96**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	10.0 U		10.0 U		10.0 U	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**2330**		**834**		**13500**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		1.00 U		**9.91**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**1280**		**1070**		**3240**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**14.4**		**20.9**		**231**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	**1.72 J**		**1.40 J**		**7.88**	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	500 U		1000 U		**2910**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	**0.290 J**		3.00 U		**0.490 J**	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**9370**		**8000**		**16800**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		**0.220 J**	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	**2.20 J**		**2.63 J**		**32.6**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	10.0 U		10.0 U		20.0 U	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**2510**		**997**		**372**
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		0.500 U		0.500 U		0.500 U
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**14.5**		**11.1**		**7.21**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		1.00 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		**0.0810 J**		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**3360**		**2700**		**3290**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		**2.70 J**		**0.480 J**		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**2.13**		**0.410 J**		**1.50**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		10.0 U		10.0 U		10.0 U
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**3430**		**618**		**3180**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		1.00 U		0.500 U		1.00 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**1460**		**1050**		**850**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**21.3**		**18.6**		**143**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		**2.36**		**1.00 J**		**1.10 J**
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		500 U		1000 U		1000 U
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		**0.340 J**		3.00 U		**0.260 J**
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**9520**		**8210**		**14700**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		**4.66 J**		**1.60 J**		**1.10 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		10.0 U		10.0 U		10.0 U
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	**0.0820 J**		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0950 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0950 U		0.0960 U		0.0950 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-029		PR79-WT-030		PR79-WT-031	
			Sample ID	PR79-WT-029-PW-01	PR79-WT-029-PW-01-F	PR79-WT-030-PW-01	PR79-WT-030-PW-01-F	PR79-WT-031-PW-01	PR79-WT-031-PW-01-F
			Sampling Date	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0950 U		0.0960 U		0.0950 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0950 U		0.0960 U		0.0950 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0950 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0960 U		0.0950 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0950 U		0.0960 U		0.0950 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0950 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0950 U		0.0960 U		0.0950 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0950 U		0.0960 U		0.0950 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0950 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0950 U		0.0960 U		0.0950 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0950 U		0.0960 U		0.0950 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0950 U		0.0960 U		0.0950 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0950 U		0.0960 U		0.0950 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 UJ		0.480 UJ		0.480 UJ	
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0950 U		0.0960 U		0.0950 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0950 U		0.0960 U		0.0950 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	0.0250 U		0.0250 U		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-029		PR79-WT-030		PR79-WT-031	
			Sample ID	PR79-WT-029-PW-01	PR79-WT-029-PW-01-F	PR79-WT-030-PW-01	PR79-WT-030-PW-01-F	PR79-WT-031-PW-01	PR79-WT-031-PW-01-F
			Sampling Date	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930	0.0500 U		0.0500 U		0.0500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-032		PR79-WT-033			
			Sample ID	PR79-WT-032-PW-01	PR79-WT-032-PW-01-F	PR79-PW-FD04-01 (FD)	PR79-PW-FD04-01-F (FD)	PR79-WT-033-PW-01	PR79-WT-033-PW-01-F
			Sampling Date	04-May-20	04-May-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
GENCHEM (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Hardness (as CaCO3)	Aqueous			**8940**		**15400**		**13100**	
HG (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77	0.100 U		0.100 UJ		0.100 UJ	
HG (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Mercury, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	.77		0.100 U		0.100 UJ		0.100 UJ
METAL (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87	**552**		**2880 J**		**1070 J**	
Antimony	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10	0.500 U		**0.0730 J**		0.500 U	
Arsenic	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150	4.00 U		4.00 U		4.00 U	
Barium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220	**15.8**		**26.2 J**		**14.8 J**	
Beryllium	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17	0.200 U		0.200 U		0.200 U	
Cadmium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996	0.200 U		0.200 U		0.200 U	
Calcium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000	**2430**		**3680**		**3550**	
Chromium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42	**0.910 J**		**3.81 J**		**1.20 J**	
Cobalt	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	**0.550 J**		**2.20**		**1.32**	
Copper	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1	**2.20 J**		10.0 U		10.0 U	
Iron	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000	**647**		**4380 J**		**2570 J**	
Lead	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25	0.500 U		**2.41**		**1.33**	
Magnesium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000	**698**		**1520 J**		**1030 J**	
Manganese	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93	**172**		**751**		**730**	
Nickel	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9	1.20 U		**2.89**		1.20 U	
Potassium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000	**953 J**		**1580**		**1190**	
Selenium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5	3.00 U		3.00 U		3.00 U	
Silver	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.400 U		0.400 U		0.400 U	
Sodium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000	**13600**		**13900**		**14000**	
Thallium	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1	0.400 U		0.400 U		0.400 U	
Vanadium	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27	4.00 U		**6.98 J**		**2.30 J**	
Zinc	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66	**3.30 J**		**9.68 J**		**7.93 J**	
METAL (Diss) (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
Aluminum, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	87		**351**		300 U		300 U
Antimony, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	10		**0.180 J**		0.500 U		**0.0870 J**
Arsenic, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	150		4.00 U		4.00 U		4.00 U
Barium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	220		**11.3**		**9.01**		**9.71**
Beryllium, Dissolved	Aqueous	RIDEM SW values Be only (freshwater chronic) App B; hardness of 100 mg/L	.17		0.200 U		0.200 U		0.200 U
Cadmium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.245996		0.200 U		0.200 U		0.200 U
Calcium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	116000		**2270**		**3320**		**3350**
Chromium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	42		4.00 U		4.00 U		4.00 U
Cobalt, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19		**0.330 J**		**1.05**		**1.11**
Copper, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	3.1		**2.70 J**		10.0 U		10.0 U
Iron, Dissolved	Aqueous	Federal AWQC - freshwater chronic; hardness of 100 mg/L	1000		**114**		**1930**		**1930**
Lead, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1.25		0.500 U		0.500 U		0.500 U
Magnesium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	82000		**621**		**846**		**854**
Manganese, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	93		**162**		**705**		**688**
Nickel, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	28.9		1.20 U		1.20 U		1.20 U
Potassium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	53000		**890 J**		1000 U		1000 U
Selenium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	5		3.00 U		3.00 U		3.00 U
Silver, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06		0.400 U		0.400 U		0.400 U
Sodium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	680000		**13800**		**13900**		**13800**
Thallium, Dissolved	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1		0.400 U		0.400 U		0.400 U
Vanadium, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	27		4.00 U		**0.680 J**		**0.820 J**
Zinc, Dissolved	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	66		**1.80 J**		**2.60 J**		**2.60 J**
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,4-Dioxane (p-Dioxane)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	0.170 U		0.170 U		0.170 U	
2-Methylnaphthalene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.0960 U		0.0950 U	
Acenaphthene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.9	0.0960 U		0.0960 U		0.0950 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-032		PR79-WT-033			
			Sample ID	PR79-WT-032-PW-01	PR79-WT-032-PW-01-F	PR79-PW-FD04-01 (FD)	PR79-PW-FD04-01-F (FD)	PR79-WT-033-PW-01	PR79-WT-033-PW-01-F
			Sampling Date	04-May-20	04-May-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Acenaphthylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	13	0.0960 U		0.0960 U		0.0950 U	
Anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.02	0.0960 UJ		0.0960 U		0.0950 U	
Benzo(a)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.0960 U		0.0950 U	
Benzo(a)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0960 UJ		0.0960 U		0.0950 U	
Benzo(b)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.6	0.0960 U		0.0960 U		0.0950 U	
Benzo(g,h,i)perylene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.0960 U		0.0950 U	
Benzo(k)fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.06	0.0960 U		0.0960 U		0.0950 U	
Chrysene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.7	0.0960 U		0.0960 U		0.0950 U	
Dibenz(a,h)anthracene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.0960 U		0.0950 U	
Fluoranthene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.8	0.0960 U		0.0960 U		0.0950 U	
Fluorene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	19	0.0960 U		0.0960 U		0.0950 U	
Indeno(1,2,3-c,d)pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	.012	0.0960 U		0.0960 U		0.0950 U	
Naphthalene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	2.6	0.0960 U		0.0960 U		0.0950 U	
Pentachlorophenol	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	.603021	0.480 UJ					
Phenanthrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	2.3	0.0960 U		0.0960 U		0.0950 U	
Pyrene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.6	0.0960 U		0.0960 U		0.0950 U	
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1-Trichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	76	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	410	0.500 U		0.500 U		0.500 U	
1,1-Dichloroethene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	13	0.500 U		0.500 U		0.500 U	
1,2,3-Trichlorobenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	8	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.7	0.0250 U		0.0250 U		0.0250 U	
1,2,4-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
1,2-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	1.8	0.500 U		0.500 U		0.500 U	
1,3,5-Trimethylbenzene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	26	0.500 U		0.500 U		0.500 U	
1,3-Dichlorobenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	8.7	0.500 U		0.500 U		0.500 U	
2-Butanone (MEK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	22000	2.50 U		2.50 U		2.50 U	
4-Methyl-2-pentanone (MIBK)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	170	2.50 U		2.50 U		2.50 U	
Acetone	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	1700	2.50 U		2.50 U		2.50 U	
Benzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	5.9	0.0250 U		0.0250 U		0.0250 U	
Bromodichloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	340	0.500 U		0.500 U		0.500 U	
Bromomethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	1.00 U		1.00 U		1.00 U	
Carbon disulfide	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	15	0.500 U		0.500 U		0.500 U	
Chloroethane	Aqueous			1.00 U		1.00 U		1.00 U	
Chloroform	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	32	**0.0250 J**		0.0250 U		0.0250 U	
Chloromethane	Aqueous			1.00 U		1.00 U		1.00 U	
cis-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	620	0.500 U		0.500 U		0.500 U	
Dibromochloromethane	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	320	0.500 U		0.500 U		0.500 U	
Ethylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	36	0.500 U		0.500 U		0.500 U	
Isopropylbenzene (Cumene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	4.8	0.500 U		0.500 U		0.500 U	
m,p-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	1.00 U		1.00 U		1.00 U	
Methylene chloride	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	214	2.50 U		2.50 U		2.50 U	
n-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
n-Propylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
o-Xylene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	3	0.500 U		0.500 U		0.500 U	
p-Cymene (p-Isopropyltoluene)	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	16	0.500 U		0.500 U		0.500 U	
sec-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	
tert-Butyl alcohol	Aqueous			2.50 U		2.50 U		2.50 U	
tert-Butylbenzene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L; Alternate Compound Selection	5.9	0.500 U		0.500 U		0.500 U	

Table A-11 Summary of Detected Analytical Results in Porewater 2020 Spring SW SE PW Sampling Event D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-032		PR79-WT-033			
			Sample ID	PR79-WT-032-PW-01	PR79-WT-032-PW-01-F	PR79-PW-FD04-01 (FD)	PR79-PW-FD04-01-F (FD)	PR79-WT-033-PW-01	PR79-WT-033-PW-01-F
			Sampling Date	04-May-20	04-May-20	27-Apr-20	27-Apr-20	27-Apr-20	27-Apr-20
Toluene	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	14	0.500 U		0.500 U		0.500 U	
trans-1,2-Dichloroethene	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	558	0.500 U		0.500 U		0.500 U	
Trichloroethene (TCE)	Aqueous	RIDEM SW values (freshwater chronic) App B ; hardness of 100 mg/L	43	0.0250 U		0.0250 U		0.0250 U	
Vinyl chloride	Aqueous	USEPA Region 4 surface water screening levels - freshwater chronic	930	0.0500 U		0.0500 U		0.0500 U	

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001	PR79-WT-002		PR79-WT-003	PR79-WT-004	PR79-WT-005	PR79-WT-006	PR79-WT-007	PR79-WT-008
			Sample ID	PR79-WT-001-SD-01	PR79-SD-FD04-01-0511 (FD)	PR79-WT-002-SD-01	PR79-WT-003-SD-01	PR79-WT-004-SD-01	PR79-WT-005-SD-01	PR79-WT-006-SD-01	PR79-WT-007-SD-01	PR79-WT-008-SD-01
			Sampling Date	04-May-20	11-May-20	11-May-20	11-May-20	08-May-20	05-May-20	05-May-20	21-May-20	14-May-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Total Organic Carbon	Solid			14000	2300 J	5400 J	7500	14000	18000	3300	12000	140000
GENCHEM (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Solid			0.100 UJ	0.0960 U	0.0960 U	0.0950 U	0.100 U	0.0920 U	0.0890 U	0.0980 U	0.280 J
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**									
pH	Solid			6.20 J	6.70 J	6.90 J	6.80 J	6.70 J	7.10 J	6.70 J	6.10 J	5.80 J
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.0210 U	0.0190 U	0.0200 U	0.0210 U	0.0200 U	0.0160 U	0.0180 U	0.0370 U	0.160
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	4460	5830	6030	3290	6360	2300	2240	11600	20600
Antimony	Solid	USEPA Region 4 sediment screening levels - freshwater	2	0.0450 U	0.0540 U	0.0350 U	0.0400 U	0.0230 J	0.0240 J	0.0150 J	0.0590 U	0.110 J
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	0.570	0.700	0.630	0.740	2.76	0.790	0.750	1.20	1.50
Barium	Solid	USEPA Region 4 sediment screening levels - freshwater	20	33.2	16.2	17.4	25.0	68.5	12.7	11.0	36.6	76.4
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	0.136	0.311	0.313	0.264	1.02	0.298	0.249	0.401	1.90
Cadmium	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.0290 J	0.110 U	0.0700 U	0.0790 U	0.0784	0.0500 J	0.0150 J	0.0310 J	0.202 J
Calcium	Solid			1200	1180	1290	459	680	416	253	1040	1790
Chromium	Solid	USEPA Region 4 sediment screening levels - freshwater	43.4	3.79	8.52	9.10	2.96	6.35	1.69	1.10	11.7	20.6
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	2.25	6.35	6.07	5.84	11.7	1.52	1.91	6.37	5.53
Copper	Solid	USEPA Region 4 sediment screening levels - freshwater	31.6	10.3	5.56	6.65	1.35 J	1.00 J	1.10 J	0.940 J	2.92 J	11.2
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	6130	14700	14500	8320	32200	6090	7090	12000	12100
Lead	Solid	USEPA Region 4 sediment screening levels - freshwater	35.8	2.92	2.46	2.80	7.30	4.80	4.81	4.28	4.34	64.3
Magnesium	Solid			1560	3530	3670	1200	1610	589	600	2520	3310
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	108	252	266	526	1320	75.0	93.0	108	152
Nickel	Solid	USEPA Region 4 sediment screening levels - freshwater	22.7	2.61	5.62	5.31	2.61	3.21	1.09	0.951	7.21	10.6
Potassium	Solid			1940	729	840	1280	1460	468	882	989	923
Selenium	Solid	USEPA Region 4 sediment screening levels - freshwater	.8	0.120 J	0.0430 J	0.0540 J	0.0790 J	0.200 J	0.0900 J	0.0540 J	0.370 J	1.64
Silver	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.270 J	0.746 J	0.741	0.641 J	1.55 J	0.241 J	0.262 J	0.903 J	0.785 J
Sodium	Solid			89.0 U	110 U	70.0 U	40.0 U	39.0 U	37.0 U	36.0 U	120 U	240 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	0.0710 J	0.0780 J	0.0778	0.131	0.331	0.0340 J	0.0490 J	0.132	0.220 J
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	11.1	23.1	24.7	8.91	23.4	7.56	7.61	36.2	32.4
Zinc	Solid	USEPA Region 4 sediment screening levels - freshwater	121	12.5	23.6	23.0	21.8	40.6	11.6	14.8	16.7	38.0
METAL (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Cadmium	Solid			0.000295 J	0.000114 J	0.000276 J	0.000297 J	0.000633 J	0.000337 J	0.000737 J	0.0000880 J	0.00194 J
Copper	Solid			0.0148	0.00479 J	0.0122	0.00428 J	0.00651 J	0.00805 J	0.00771 J	0.00272 J	0.100
Lead	Solid			0.00664	0.00224 J	0.00557 J	0.0242	0.00836	0.0159	0.0203	0.00299	0.279
Nickel	Solid			0.0116	0.00824	0.0144	0.00398	0.00992	0.00658	0.0186	0.00168 J	0.0723
Silver	Solid			0.000740 J	0.000220 J	0.000350 J	0.000190 J	0.000550 J	0.000550 J	0.00161 J	0.000250 J	0.00219 J

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001	PR79-WT-002		PR79-WT-003	PR79-WT-004	PR79-WT-005	PR79-WT-006	PR79-WT-007	PR79-WT-008
			Sample ID	PR79-WT-001-SD-01	PR79-SD-FD04-01-0511 (FD)	PR79-WT-002-SD-01	PR79-WT-003-SD-01	PR79-WT-004-SD-01	PR79-WT-005-SD-01	PR79-WT-006-SD-01	PR79-WT-007-SD-01	PR79-WT-008-SD-01
			Sampling Date	04-May-20	11-May-20	11-May-20	11-May-20	08-May-20	05-May-20	05-May-20	21-May-20	14-May-20
Zinc	Solid			**0.0331**	**0.0390 J**	**0.0766 J**	**0.0539**	**0.125**	**0.0833**	**0.227**	**0.00761**	**0.269**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00280 J**	**0.00170 J**	**0.00190 J**	**0.00240 J**	**0.00150 J**	**0.00330 J**	**0.00210 J**	**0.00180 J**	0.140 UJ
2-Methylnaphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0202	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	0.0280 U
Acenaphthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0067	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	0.0280 U
Acenaphthylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0059	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	0.0280 U
Anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.057	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	0.0280 U
Benzo(a)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.108	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 UJ	0.0110 UJ	0.0120 U	**0.0210 J**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	**0.0300 J**
Benzo(b)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.19	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	**0.00330 J**	0.0110 UJ	0.0120 U	**0.0440 J**
Benzo(g,h,i)perylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.0120 U	**0.0110 J**	0.0120 U	**0.00420 J**	0.0130 U	**0.00280 J**	0.0110 U	0.0120 U	**0.0510 J**
Benzo(k)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.24	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	**0.0170 J**
Chrysene	Solid	USEPA Region 4 sediment screening levels - freshwater	.166	**0.00280 J**	0.0120 U	0.0120 U	0.0120 U	0.0130 U	**0.00350 J**	0.0110 U	0.0120 U	0.0560 U
Dibenz(a,h)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.033	0.0120 U	**0.00660 J**	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	**0.00730 J**
Fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.423	**0.00450 J**	0.0120 U	0.0120 U	0.0120 U	0.0130 U	**0.00520 J**	**0.00230 J**	0.0120 U	**0.0470 J**
Fluorene	Solid	USEPA Region 4 sediment screening levels - freshwater	.077	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	0.0280 U
Indeno(1,2,3-c,d)pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.2	0.0120 U	**0.00960 J**	0.0120 U	**0.00420 J**	0.0130 U	**0.00300 J**	0.0110 U	0.0120 U	**0.0250 J**
Naphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.176	0.0120 U	0.0120 U	0.0120 U	0.0120 U	0.0130 U	0.0110 U	0.0110 U	0.0120 U	0.0280 U
Pentachlorophenol	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.0580 U	0.0630 U	0.0620 U	0.0620 U	0.0660 U	0.0550 U	0.0530 U	0.0580 U	0.140 U
Phenanthrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.204	**0.00250 J**	0.0120 U	0.0120 U	0.0120 U	0.0130 U	**0.00230 J**	0.0110 U	0.0120 U	**0.0420 J**
Pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.195	**0.00390 J**	0.0120 U	0.0120 U	0.0120 U	0.0130 U	**0.00480 J**	0.0110 U	0.0120 U	**0.0700**
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.07	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,1-Dichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.02	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,1-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.1	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,2,3-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.113	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.011	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.097	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,2-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.095	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 UJ	0.0100 U
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.164	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
1,3-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.089	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 UJ	0.0100 U
2-Butanone (MEK)	Solid	USEPA Region 4 sediment screening levels - freshwater	7.604	0.0140 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0140 U	0.0120 U	**0.0440 J**
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Region 4 sediment screening levels - freshwater	.073	0.0140 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0140 U	0.0120 U	0.0520 U
Acetone	Solid	USEPA Region 4 sediment screening levels - freshwater	.065	**0.0360 J**	**0.0120 J**	0.0120 U	**0.0100 J**	**0.0770 J**	**0.0240 J**	**0.0180 J**	**0.00590 J**	**0.150**
Benzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-001	PR79-WT-002		PR79-WT-003	PR79-WT-004	PR79-WT-005	PR79-WT-006	PR79-WT-007	PR79-WT-008
			Sample ID	PR79-WT-001-SD-01	PR79-SD-FD04-01-0511 (FD)	PR79-WT-002-SD-01	PR79-WT-003-SD-01	PR79-WT-004-SD-01	PR79-WT-005-SD-01	PR79-WT-006-SD-01	PR79-WT-007-SD-01	PR79-WT-008-SD-01
			Sampling Date	04-May-20	11-May-20	11-May-20	11-May-20	08-May-20	05-May-20	05-May-20	21-May-20	14-May-20
Bromodichloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.21	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Bromomethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.0065	0.00550 U	0.00480 U	0.00480 U	0.00450 U	0.00480 U	0.00500 U	0.00550 U	0.00500 U	0.0210 U
Carbon disulfide	Solid	USEPA Region 4 sediment screening levels - freshwater	.0078	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00550 U	0.00480 U	0.00480 U	0.00450 U	0.00480 U	0.00500 U	0.00550 U	0.00500 U	0.0210 U
Chloroform	Solid	USEPA Region 4 sediment screening levels - freshwater	.087	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00550 U	0.00480 U	0.00480 U	0.00450 U	0.00480 U	0.00500 U	0.00550 U	0.00500 U	0.0210 U
cis-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.432	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Dibromochloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.198	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Ethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.29	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.035	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
m,p-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.00550 U	0.00480 U	0.00480 U	0.00450 U	0.00480 U	0.00500 U	0.00550 U	0.00500 U	0.0210 U
Methylene chloride	Solid	USEPA Region 4 sediment screening levels - freshwater	.018	0.0140 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	**0.0160 J**	0.0120 U	0.0520 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
o-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.184	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0140 U	0.0120 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U	0.0140 U	0.0120 U	0.0520 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Toluene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
trans-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.389	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Trichloroethene (TCE)	Solid	USEPA Region 4 sediment screening levels - freshwater	.078	0.00280 U	0.00240 U	0.00240 U	0.00220 U	0.00240 U	0.00250 U	0.00280 U	0.00250 U	0.0100 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00550 U	0.00480 U	0.00480 U	0.00450 U	0.00480 U	0.00500 U	0.00550 U	0.00500 U	0.0210 U

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009	PR79-WT-010		PR79-WT-011	PR79-WT-012	PR79-WT-013	PR79-WT-014	PR79-WT-015	PR79-WT-016
			Sample ID	PR79-WT-009-SD-01	PR79-SD-FD03-01 (FD)	PR79-WT-010-SD-01	PR79-WT-011-SD-01	PR79-WT-012-SD-01	PR79-WT-013-SD-01	PR79-WT-014-SD-01	PR79-WT-015-SD-01	PR79-WT-016-SD-01
			Sampling Date	19-May-20	12-May-20	12-May-20	12-May-20	19-May-20	19-May-20	06-May-20	06-May-20	21-May-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Total Organic Carbon	Solid			140000	18000	17000	91000	58000	31000	110000	2200 U	110000
GENCHEM (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Solid				0.110 U	0.110 U	0.180 U			0.150 U	0.170 U	0.160 U
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**									
pH	Solid			6.10 J	5.70 J	5.70 J	5.60 J	5.60 J	5.90 J	6.60 J	6.80 J	5.50 J
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.170	0.0160 J	0.0140 J	0.0350 J	0.0320 J	0.0400	0.0690	0.0720	0.0790
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	24400	12700	11200	5650	9050	16200	14100	14400	21000
Antimony	Solid	USEPA Region 4 sediment screening levels - freshwater	2	0.160 J	0.0290 J	0.0350 J	0.0770 J	0.0440 J	0.0290 J	0.120 J	0.0430 J	0.0860 J
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	2.60	1.64	1.43	0.510 J	0.690	0.680	2.22	0.920	1.30
Barium	Solid	USEPA Region 4 sediment screening levels - freshwater	20	50.4	45.0	37.7	31.1	68.0	74.6	60.2	108	75.8
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	1.95	0.492	0.493	0.300	0.254	0.397	1.26	0.781	2.07
Cadmium	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.267	0.110 U	0.0880 U	0.170 U	0.0878 J	0.107	0.111 J	0.193	0.198
Calcium	Solid			1340	879	734	1070	1240	1380	2220	4480	1130
Chromium	Solid	USEPA Region 4 sediment screening levels - freshwater	43.4	18.2	17.8	16.7	5.79	7.06	12.8	9.84	20.3	25.8
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	10.6	16.5	14.0	0.977	2.33	2.40	13.5	5.41	8.38
Copper	Solid	USEPA Region 4 sediment screening levels - freshwater	31.6	12.6	6.10	5.44	4.40	4.33	3.90	5.80	8.01	8.72
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	14400	17300	17400	2410	8990	7220	15300	12000	14000
Lead	Solid	USEPA Region 4 sediment screening levels - freshwater	35.8	32.8	4.93	7.93	19.9	15.1	14.5	24.8	13.6	17.6
Magnesium	Solid			1990	3500	2730	717	1850	1490	2000	3460	3780
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	602	1130 J	2050 J	28.5	114	54.0	724	182	554
Nickel	Solid	USEPA Region 4 sediment screening levels - freshwater	22.7	9.18	8.62	7.11	2.96	4.00	5.67	5.52	7.72	10.9
Potassium	Solid			738	1170	906	581	2100	981	671	2490	1380
Selenium	Solid	USEPA Region 4 sediment screening levels - freshwater	.8	4.58	0.428 J	0.561	0.420 J	0.290 J	0.402 J	0.755	0.926	2.44
Silver	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.705 J	1.27	1.11	0.250 J	0.424 J	0.374 J	0.522 J	0.523 J	0.746 J
Sodium	Solid			110 U	110 U	88.0 U	85.0 U	120 U	99.0 U	140 U	140 U	180 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	0.269	0.173	0.195	0.0900 J	0.163	0.219	0.199	0.198	0.392
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	35.0	32.4	33.5	9.21	20.0	20.0	28.4	30.8	32.5
Zinc	Solid	USEPA Region 4 sediment screening levels - freshwater	121	32.5	26.2	24.0	9.06	17.8	17.3	23.9	29.4	34.7
METAL (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Cadmium	Solid			0.00123 J	0.000470 J	0.000190 J	0.000492 J	0.000110 J	0.000360 J	0.000385 J	0.000820 J	0.000736 J
Copper	Solid			0.0350 J	0.0197	0.00695 J	0.0214	0.00316 J	0.00563 J	0.0131 J	0.0301	0.0188
Lead	Solid			0.0490 J	0.0156 J	0.00664 J	0.0469	0.00959	0.0155	0.0318	0.0261	0.0275
Nickel	Solid			0.0163 J	0.0211 J	0.00629 J	0.0147	0.00298 J	0.00580	0.00781	0.0261	0.0114
Silver	Solid			0.000540 J	0.00121 J	0.000360 J	0.000330 J	0.000180 J	0.000220 J	0.000820 J	0.00109 J	0.000430 J

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009	PR79-WT-010		PR79-WT-011	PR79-WT-012	PR79-WT-013	PR79-WT-014	PR79-WT-015	PR79-WT-016
			Sample ID	PR79-WT-009-SD-01	PR79-SD-FD03-01 (FD)	PR79-WT-010-SD-01	PR79-WT-011-SD-01	PR79-WT-012-SD-01	PR79-WT-013-SD-01	PR79-WT-014-SD-01	PR79-WT-015-SD-01	PR79-WT-016-SD-01
			Sampling Date	19-May-20	12-May-20	12-May-20	12-May-20	19-May-20	19-May-20	06-May-20	06-May-20	21-May-20
Zinc	Solid			**0.0543 J**	**0.0784 J**	**0.0316 J**	**0.0496**	**0.0113**	**0.0225**	**0.0332**	**0.109**	**0.0414**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.150 UJ	**0.00180 J**	**0.00240 J**	**0.00600 J**	0.0760 UJ	**0.00490 J**	**0.00240 J**	**0.00260 J**	**0.00340 J**
2-Methylnaphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0202	0.0300 U	0.0120 U	0.0110 U	0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Acenaphthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0067	0.0300 U	0.0120 U	0.0110 U	0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Acenaphthylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0059	0.0300 U	0.0120 U	0.0110 U	0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.057	0.0300 U	0.0120 U	0.0110 U	0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Benzo(a)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.108	**0.0240 J**	0.0120 U	0.0110 U	**0.00920 J**	**0.0100 J**	**0.00460 J**	**0.00950 J**	**0.00720 J**	**0.0110 J**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.0360 J**	0.0120 U	**0.0110 J**	**0.0150 J**	**0.0160 J**	**0.00530 J**	**0.0180 J**	**0.0110 J**	**0.0200 J**
Benzo(b)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.19	**0.0480 J**	0.0120 UJ	**0.0210 J**	**0.0190 J**	**0.0210 J**	**0.00960 J**	**0.0180 J**	**0.0150 J**	**0.0200 J**
Benzo(g,h,i)perylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	**0.0210 J**	0.0120 U		**0.0170 J**	**0.00820 J**	**0.00400 J**	**0.0170 J**	**0.0120 J**	**0.0150 J**
Benzo(k)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.24	**0.0220 J**	0.0120 U	**0.0190 J**	**0.0100 J**	**0.00950 J**	0.0150 U	**0.00920 J**	**0.00750 J**	**0.0130 J**
Chrysene	Solid	USEPA Region 4 sediment screening levels - freshwater	.166	**0.0400 J**	0.0120 U	0.0110 U	0.0210 U	**0.0170 J**	**0.00600 J**	**0.0160 J**	**0.0120 J**	**0.0180 J**
Dibenz(a,h)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.033	0.0300 U	0.0120 U		0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.423	**0.0640**	**0.00320 J**	**0.00210 J**	**0.0220 J**	**0.0260 J**	**0.00860 J**	**0.0180 J**	**0.0120 J**	0.0400 U
Fluorene	Solid	USEPA Region 4 sediment screening levels - freshwater	.077	0.0300 U	0.0120 U	0.0110 U	0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Indeno(1,2,3-c,d)pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.2	**0.0220 J**	0.0120 U		**0.0150 J**	**0.00800 J**	**0.00440 J**	**0.0130 J**	**0.0110 J**	**0.0190 J**
Naphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.176	0.0300 U	0.0120 U	0.0110 U	0.0210 U	0.0150 U	0.0150 U	0.0200 U	0.0200 U	0.0200 U
Pentachlorophenol	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.150 U	0.0610 U	0.0570 U	0.100 U	0.0760 U	0.0730 U	0.0990 U	0.0980 U	0.100 U
Phenanthrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.204	**0.0390 J**	**0.00300 J**	0.0110 U	**0.0180 J**	**0.0160 J**	**0.00520 J**	**0.0110 J**	**0.00850 J**	0.0200 U
Pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.195	**0.0700**	**0.00460 J**	0.0110 U	**0.0400 J**	**0.0300 J**	**0.00970 J**	**0.0280 J**	**0.0210 J**	0.0400 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.07	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,1-Dichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.02	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,1-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.1	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,2,3-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.113	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.011	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.097	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,2-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.095	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.164	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
1,3-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.089	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
2-Butanone (MEK)	Solid	USEPA Region 4 sediment screening levels - freshwater	7.604	0.0390 UJ	0.0150 U	0.0150 UJ	**0.0660 J**	0.0240 UJ	0.0140 U	0.0210 UJ	0.0210 U	**0.0940 J**
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Region 4 sediment screening levels - freshwater	.073	0.0390 UJ	0.0150 U	0.0150 UJ	0.0250 UJ	0.0240 UJ	0.0140 U	0.0210 UJ	0.0210 U	0.0310 UJ
Acetone	Solid	USEPA Region 4 sediment screening levels - freshwater	.065	**0.0230 J**	**0.0300**	**0.0540 J**	**0.0580 J**	**0.0740 J**	0.0140 U	**0.120 J**	0.0210 U	**0.750 J**
Benzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-009	PR79-WT-010		PR79-WT-011	PR79-WT-012	PR79-WT-013	PR79-WT-014	PR79-WT-015	PR79-WT-016
			Sample ID	PR79-WT-009-SD-01	PR79-SD-FD03-01 (FD)	PR79-WT-010-SD-01	PR79-WT-011-SD-01	PR79-WT-012-SD-01	PR79-WT-013-SD-01	PR79-WT-014-SD-01	PR79-WT-015-SD-01	PR79-WT-016-SD-01
			Sampling Date	19-May-20	12-May-20	12-May-20	12-May-20	19-May-20	19-May-20	06-May-20	06-May-20	21-May-20
Bromodichloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.21	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Bromomethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.0065	0.0160 UJ	0.00600 U	0.00600 UJ	0.0100 UJ	0.00950 UJ	0.00550 U	0.00850 UJ	0.00850 U	0.0120 UJ
Carbon disulfide	Solid	USEPA Region 4 sediment screening levels - freshwater	.0078	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.0160 UJ	0.00600 U	0.00600 UJ	0.0100 UJ	0.00950 UJ	0.00550 U	0.00850 UJ	0.00850 U	0.0120 UJ
Chloroform	Solid	USEPA Region 4 sediment screening levels - freshwater	.087	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.0160 UJ	0.00600 U	0.00600 UJ	0.0100 UJ	0.00950 UJ	0.00550 U	0.00850 UJ	0.00850 U	0.0120 UJ
cis-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.432	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Dibromochloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.198	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Ethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.29	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.035	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
m,p-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.0160 UJ	0.00600 U	0.00600 UJ	0.0100 UJ	0.00950 UJ	0.00550 U	0.00850 UJ	0.00850 U	0.0120 UJ
Methylene chloride	Solid	USEPA Region 4 sediment screening levels - freshwater	.018	0.0390 UJ	0.0150 U	0.0150 UJ	0.0250 UJ	0.0240 UJ	0.0140 U	0.0210 UJ	0.0210 U	0.0310 UJ
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
o-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.184	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0390 UJ	0.0150 U	0.0150 UJ	0.0250 UJ	0.0240 UJ	0.0140 U	0.0210 UJ	0.0210 U	0.0310 UJ
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Toluene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
trans-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.389	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Trichloroethene (TCE)	Solid	USEPA Region 4 sediment screening levels - freshwater	.078	0.00780 UJ	0.00300 U	0.00300 UJ	0.00500 UJ	0.00480 UJ	0.00280 U	0.00420 UJ	0.00420 U	0.00620 UJ
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.0160 UJ	0.00600 U	0.00600 UJ	0.0100 UJ	0.00950 UJ	0.00550 U	0.00850 UJ	0.00850 U	0.0120 UJ

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018		PR79-WT-019	PR79-WT-020	PR79-WT-021	PR79-WT-022	PR79-WT-023	PR79-WT-024
			Sample ID	PR79-WT-017-SD-01	PR79-SD-FD01-01 (FD)	PR79-WT-018-SD-01	PR79-WT-019-SD-01	PR79-WT-020-SD-01	PR79-WT-021-SD-01	PR79-WT-022-SD-01	PR79-WT-023-SD-01	PR79-WT-024-SD-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	05-May-20	28-Apr-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Total Organic Carbon	Solid			110000	87000	97000	15000	58000	92000	13000	22000 J	37000
GENCHEM (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Solid			0.150 U	0.190 U	0.170 U	0.100 U	0.160 U	0.260 U		0.120 U	0.130 U
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**									
pH	Solid			5.70 J	5.20 J	5.20 J	6.70 J	6.00 J	5.70 J	6.20 J	6.50 J	5.80 J
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.125	0.173	0.153	0.0190 U	0.0770	0.0320 J	0.0320 J	0.00830 J	0.0130 J
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	5080	18500	26900	6000	14600	11500	7140	3300	3650
Antimony	Solid	USEPA Region 4 sediment screening levels - freshwater	2	0.0950 J	0.130 J	0.0930 J	0.0400 U	0.0440 J	0.130 J	0.0490 J	0.0510 J	0.0470 J
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	1.10	2.20	2.80	0.720	0.850	1.30	4.92	0.330 J	0.420 J
Barium	Solid	USEPA Region 4 sediment screening levels - freshwater	20	83.9	87.6	109	42.7	92.7	42.5	52.8	17.3	13.1
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	1.26	0.967	0.964	0.244	1.24	0.957	0.978	0.320	0.275
Cadmium	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.468	0.220 J	0.259	0.0280 J	0.262	0.140 J	0.117	0.0710 J	0.0520 J
Calcium	Solid			1560	1520	1340	1300	1720	987	1070	824 J	695
Chromium	Solid	USEPA Region 4 sediment screening levels - freshwater	43.4	6.40	17.9	28.0	7.25	15.1	12.7	9.15	2.48	3.41
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	1.56	4.74	6.62	5.22	9.52	15.0	12.6	2.88	0.834
Copper	Solid	USEPA Region 4 sediment screening levels - freshwater	31.6	8.82	10.8	14.2	2.34	6.90	5.40 J	5.30 J	1.20 J	1.30 U
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	1690	11700	17000	8790	8360	12100	48900	2300	2440
Lead	Solid	USEPA Region 4 sediment screening levels - freshwater	35.8	31.7	42.2	46.5	4.58	26.6	40.3	12.4	10.2	6.08
Magnesium	Solid			407	2110	3000	2030	1980	2550	1680	498 J	645
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	29.6	125	148	164	208	849	1090	57.6	32.4
Nickel	Solid	USEPA Region 4 sediment screening levels - freshwater	22.7	5.80	8.82 J	13.2 J	4.65	7.27	6.36	3.61 J	1.30 J	1.80
Potassium	Solid			713	1310	1910	1240	890	838	650	328	408
Selenium	Solid	USEPA Region 4 sediment screening levels - freshwater	.8	0.570 J	1.12 J	0.938 J	0.0840 J	0.797 J	1.04 J	0.410 J	0.200 J	0.310 J
Silver	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.290 J	0.721 J	0.923 J	0.352 J	0.440 J	0.752 J	1.64 J	0.110 J	0.150 J
Sodium	Solid			180 U	120 U	210 U	81.0 U	85.0 U	120 U	110 U	140 U	130 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	0.140 J	0.401	0.523	0.0876	0.256	0.180 J	0.207	0.0690 J	0.0530 U
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	7.61	34.1	49.8	15.7	21.2	28.3	46.7	6.13	7.22
Zinc	Solid	USEPA Region 4 sediment screening levels - freshwater	121	15.9	28.7	30.7	21.5	28.7	22.9	21.7	10.8	5.69
METAL (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Cadmium	Solid			0.00146 J	0.00138 J	0.000435 J	0.0000970 J	0.000356 J	0.00169 J	0.0000870 J	0.000894 J	0.000110 J
Copper	Solid			0.0155	0.0341	0.0100 J	0.00815 J	0.00871 J	0.0495	0.00425 J	0.00461 J	0.00540 U
Lead	Solid			0.0491	0.0805 J	0.0245 J	0.00539	0.0419	0.150	0.00404	0.0419 J	0.00657
Nickel	Solid			0.0195	0.0304 J	0.00811 J	0.0429	0.00781	0.0485	0.00208 J	0.00959	0.00403 J
Silver	Solid			0.000280 J	0.00152 J	0.000370 J	0.000220 J	0.000120 J	0.00249 J	0.000110 J	0.000180 J	0.000200 J

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018		PR79-WT-019	PR79-WT-020	PR79-WT-021	PR79-WT-022	PR79-WT-023	PR79-WT-024
			Sample ID	PR79-WT-017-SD-01	PR79-SD-FD01-01 (FD)	PR79-WT-018-SD-01	PR79-WT-019-SD-01	PR79-WT-020-SD-01	PR79-WT-021-SD-01	PR79-WT-022-SD-01	PR79-WT-023-SD-01	PR79-WT-024-SD-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	05-May-20	28-Apr-20
Zinc	Solid			**0.0846**	**0.0984 J**	**0.0264 J**	**0.0323**	**0.0341**	**0.173**	**0.00913**	**0.101 J**	0.0100 U
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00260 J**	0.120 UJ	**0.00440 J**	**0.00180 J**	**0.00280 J**	**0.0100 J**	0.0640 UJ	0.0750 UJ	**0.00230 J**
2-Methylnaphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0202	0.0180 U	0.0240 U	0.0220 U	0.0110 U	0.0180 U	0.0320 UJ	0.0130 U	0.0150 U	0.0170 U
Acenaphthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0067	0.0180 U	0.0240 U	0.0220 U	0.0110 U	0.0180 U	0.0320 UJ	0.0130 U	0.0150 U	0.0170 U
Acenaphthylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0059	0.0180 U	0.0240 U	0.0220 U	0.0110 U	0.0180 U	0.0320 UJ	0.0130 U	0.0150 U	0.0170 U
Anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.057	**0.00530 J**	0.0240 U	0.0220 U	0.0110 U	0.0180 U	0.0320 UJ	**0.00160 J**	0.0150 U	0.0170 U
Benzo(a)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.108	**0.0150 J**	**0.0170 J**	**0.0200 J**	0.0110 UJ	**0.00440 J**	**0.0110 J**	**0.00420 J**	**0.00360 J**	**0.00460 J**
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.0240 J**	**0.0280 J**	**0.0280 J**	0.0110 U	**0.00810 J**	**0.0940 J**	**0.00440 J**	0.0150 U	**0.00730 J**
Benzo(b)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.19	**0.0230 J**	**0.0350 J**	**0.0440**	0.0110 UJ	**0.00970 J**	**0.200 J**	**0.00470 J**	**0.00590 J**	**0.00850 J**
Benzo(g,h,i)perylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	**0.0220 J**	**0.0250 J**	**0.0320 J**	**0.00240 J**	**0.0130 J**	**0.120 J**	**0.00350 J**	**0.00470 J**	**0.00460 J**
Benzo(k)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.24	**0.0170 J**	**0.0160 J**	**0.0270 J**	0.0110 U	0.0180 U	**0.0770 J**	**0.00410 J**	0.0150 U	**0.00560 J**
Chrysene	Solid	USEPA Region 4 sediment screening levels - freshwater	.166	**0.0210 J**	**0.0300 J**	**0.0340 J**	**0.00230 J**	**0.00720 J**	0.0320 UJ	0.0130 U	**0.00550 J**	0.0170 U
Dibenz(a,h)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.033	0.0180 U	**0.00640 J**	**0.00710 J**	0.0110 U	**0.00720 J**	0.0320 UJ	0.0130 U	0.0150 U	0.0170 UJ
Fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.423	0.0370 U	**0.0380 J**	**0.0470**	**0.00240 J**	**0.00680 J**	**0.0280 J**	0.0130 U	**0.00830 J**	**0.00910 J**
Fluorene	Solid	USEPA Region 4 sediment screening levels - freshwater	.077	0.0180 U	0.0240 U	0.0220 U	0.0110 U	0.0180 U	0.0320 UJ	0.0130 U	0.0150 U	0.0170 U
Indeno(1,2,3-c,d)pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.2	**0.0260 J**	**0.0240 J**	**0.0290 J**	**0.00240 J**	**0.0120 J**	**0.0910 J**	**0.00290 J**	**0.00460 J**	**0.00380 J**
Naphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.176	0.0180 U	0.0240 U	0.0220 U	0.0110 U	0.0180 U	0.0320 UJ	0.0130 U	0.0150 U	0.0170 U
Pentachlorophenol	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.0920 U	0.120 U	0.110 U	0.0570 U	0.0880 U	0.160 U	0.0640 U	0.0750 U	0.0860 U
Phenanthrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.204	0.0180 U	**0.0270 J**	**0.0320 J**	0.0110 U	**0.00500 J**	**0.0210 J**	0.0130 U	**0.00400 J**	**0.00560 J**
Pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.195	0.0370 U	**0.0650**	**0.0650**	**0.00360 J**	**0.0100 J**	**0.0190 J**	0.0130 U	**0.00810 J**	**0.0100 J**
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.07	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,1-Dichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.02	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,1-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.1	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,2,3-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.113	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.011	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.097	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	**0.00480 J**	0.00350 UJ	0.00500 UJ
1,2-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.095	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.164	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
1,3-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.089	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
2-Butanone (MEK)	Solid	USEPA Region 4 sediment screening levels - freshwater	7.604	**0.0750 J**	**0.0720 J**	**0.0430 J**	0.0140 U	**0.170 J**	0.0550 U	0.0160 U	**0.0150 J**	**0.100 J**
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Region 4 sediment screening levels - freshwater	.073	0.0320 UJ	0.0350 UJ	0.0300 UJ	0.0140 U	0.0260 UJ	0.0550 U	0.0160 U	0.0180 UJ	0.0250 UJ
Acetone	Solid	USEPA Region 4 sediment screening levels - freshwater	.065	**0.460 J**	**0.600 J**	**0.360 J**	0.0140 U	**0.520 J**	**0.0790 J**	**0.00920 J**	**0.100 J**	**0.310 J**
Benzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	**0.00140 J**	0.00350 UJ	0.00500 UJ

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-017	PR79-WT-018		PR79-WT-019	PR79-WT-020	PR79-WT-021	PR79-WT-022	PR79-WT-023	PR79-WT-024
			Sample ID	PR79-WT-017-SD-01	PR79-SD-FD01-01 (FD)	PR79-WT-018-SD-01	PR79-WT-019-SD-01	PR79-WT-020-SD-01	PR79-WT-021-SD-01	PR79-WT-022-SD-01	PR79-WT-023-SD-01	PR79-WT-024-SD-01
			Sampling Date	21-May-20	06-May-20	06-May-20	06-May-20	06-May-20	14-May-20	20-May-20	05-May-20	28-Apr-20
Bromodichloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.21	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Bromomethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.0065	0.0130 UJ	0.0140 UJ	0.0120 UJ	0.00550 U	0.0100 UJ	0.0220 U	0.00650 U	0.00700 UJ	0.0100 UJ
Carbon disulfide	Solid	USEPA Region 4 sediment screening levels - freshwater	.0078	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	**0.00200 J**
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.0130 UJ	0.0140 UJ	0.0120 UJ	0.00550 U	0.0100 UJ	0.0220 U	0.00650 U	0.00700 UJ	0.0100 UJ
Chloroform	Solid	USEPA Region 4 sediment screening levels - freshwater	.087	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.0130 UJ	0.0140 UJ	0.0120 UJ	0.00550 U	0.0100 UJ	0.0220 U	0.00650 U	0.00700 UJ	0.0100 UJ
cis-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.432	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Dibromochloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.198	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Ethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.29	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.035	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
m,p-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.0130 UJ	0.0140 UJ	0.0120 UJ	0.00550 U	0.0100 UJ	0.0220 U	0.00650 U	0.00700 UJ	0.0100 UJ
Methylene chloride	Solid	USEPA Region 4 sediment screening levels - freshwater	.018	0.0320 UJ	0.0350 UJ	0.0300 UJ	0.0140 U	0.0260 UJ	0.0550 U	0.0160 U	**0.0120 J**	0.0250 UJ
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
o-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.184	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0320 UJ	0.0350 UJ	0.0300 UJ	0.0140 U	0.0260 UJ	0.0550 U	0.0160 U	0.0180 UJ	0.0250 UJ
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Toluene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	**0.0140**	0.00350 UJ	0.00500 UJ
trans-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.389	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Trichloroethene (TCE)	Solid	USEPA Region 4 sediment screening levels - freshwater	.078	0.00650 UJ	0.00700 UJ	0.00600 UJ	0.00280 U	0.00520 UJ	0.0110 U	0.00320 U	0.00350 UJ	0.00500 UJ
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.0130 UJ	0.0140 UJ	0.0120 UJ	0.00550 U	0.0100 UJ	0.0220 U	0.00650 U	0.00700 UJ	0.0100 UJ

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-025	PR79-WT-026	PR79-WT-027	PR79-WT-028	PR79-WT-029	PR79-WT-030	PR79-WT-031	PR79-WT-032	PR79-WT-033
			Sample ID	PR79-WT-025-SD-01	PR79-WT-026-SD-01	PR79-WT-027-SD-01	PR79-WT-028-SD-01	PR79-WT-029-SD-01	PR79-WT-030-SD-01	PR79-WT-031-SD-01	PR79-WT-032-SD-01	PR79-SD-FD04-01 (FD)
			Sampling Date	28-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	04-May-20	27-Apr-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Total Organic Carbon	Solid			270000 J	160000	350000 J	32000	18000	29000	17000	5400 J	2900
GENCHEM (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Sulfide	Solid			0.310 UJ	0.190 U	0.460 UJ	0.0820 U	0.0820 U	0.120 U	0.100 U	0.0960 UJ	0.0900 U
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**									
pH	Solid			5.90 J	5.50 J	5.60 J	5.30 J	5.40 J	5.60 J	6.40 J	5.90 J	7.00 J
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Mercury	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.130 J	0.0460 J	0.130 J	0.0230 J	0.0150 U	0.0230 U	0.0200 U	0.0180 U	0.0200 UJ
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	18900 J	7050	13000 J	6100	4950	3520	6030	3440	2600
Antimony	Solid	USEPA Region 4 sediment screening levels - freshwater	2	0.160 J	0.0710 J	0.260 J	0.0190 J	0.0400 J	0.0630 U	0.0540 U	0.0480 UJ	0.0200 J
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	3.30 J	1.90	3.00 J	0.480	0.560	0.300 J	0.720	0.440 J	0.330
Barium	Solid	USEPA Region 4 sediment screening levels - freshwater	20	108 J	48.3	43.0 J	20.6	17.0	17.4	21.4	17.2	15.6
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	4.89 J	3.78	3.40 J	0.336	0.609	0.266	0.592	0.184	0.146
Cadmium	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.681 J	0.296	0.445 J	0.0510 J	0.0980 U	0.120 U	0.110 U	0.0160 J	0.0703
Calcium	Solid			9070 J	3370	4520 J	315	594	370	726	449 J	501
Chromium	Solid	USEPA Region 4 sediment screening levels - freshwater	43.4	23.3 J	5.89	7.74 J	3.94	5.28	3.73	6.22	2.50	3.68
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	2.38 J	1.33	1.68 J	1.27	0.942	1.39	2.01	2.61	2.12
Copper	Solid	USEPA Region 4 sediment screening levels - freshwater	31.6	10.0 UJ	4.29 J	5.40 J	1.67 J	0.460 J	0.280 J	0.570 J	0.790 J	2.37
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	6900 J	2780	7120 J	3320	3110	4070	5960	5660	2910
Lead	Solid	USEPA Region 4 sediment screening levels - freshwater	35.8	45.3 J	13.6	47.5 J	6.82	9.17	4.63	5.55	2.88	3.96
Magnesium	Solid			1560 J	616	1060 J	957	685	1230	1510	1100	722
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	59.0 J	19.8	46.8 J	53.2	35.3	65.0	106	120 J	74.2
Nickel	Solid	USEPA Region 4 sediment screening levels - freshwater	22.7	7.07 J	3.64	5.60 UJ	2.65	2.08	2.46	2.67	2.11	2.39
Potassium	Solid			1240 J	432	709 J	889	382	932	682	595	586
Selenium	Solid	USEPA Region 4 sediment screening levels - freshwater	.8	4.27 J	1.61	2.26 J	0.311 J	0.190 J	0.120 J	0.230 J	0.0720 J	0.0750 J
Silver	Solid	USEPA Region 4 sediment screening levels - freshwater	1	0.400 J	0.940 U	0.260 J	0.150 J	0.180 J	0.300 J	0.290 J	0.250 J	0.0960 J
Sodium	Solid			410 UJ	120 U	280 UJ	69.0 U	49.0 U	63.0 U	110 U	48.0 U	63.0 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	0.510 J	0.110 J	0.110 J	0.0600 J	0.0840 J	0.0480 J	0.0940 J	0.0480 J	0.0817
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	25.5 J	6.82	16.9 J	7.63	8.92	8.30	13.0	7.57	6.40
Zinc	Solid	USEPA Region 4 sediment screening levels - freshwater	121	14.0 J	16.9	12.2 J	8.42	5.57	9.86	12.4	16.4	11.5
METAL (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**									
Cadmium	Solid			0.00234 J	0.000567 J	0.000849 J	0.0000930 J	0.000266 J	0.000419 J	0.000123 J	0.0000940 J	0.000178 J
Copper	Solid			0.0248 J	0.00490 J	0.00840 J	0.00164 J	0.00188 J	0.00298 J	0.00112 J	0.00399 J	0.0156
Lead	Solid			0.0660 J	0.0182	0.0362 J	0.00609	0.0154	0.0117	0.00469	0.00307 J	0.00542
Nickel	Solid			0.0300 J	0.00706 J	0.0167 J	0.00140 J	0.00753	0.00688	0.00311 J	0.00589	0.0103
Silver	Solid			0.0140 UJ	0.00190 U	0.00470 UJ	0.000820 U	0.000170 J	0.000290 J	0.0000690 J	0.000280 J	0.000290 J

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-025	PR79-WT-026	PR79-WT-027	PR79-WT-028	PR79-WT-029	PR79-WT-030	PR79-WT-031	PR79-WT-032	PR79-WT-033
			Sample ID	PR79-WT-025-SD-01	PR79-WT-026-SD-01	PR79-WT-027-SD-01	PR79-WT-028-SD-01	PR79-WT-029-SD-01	PR79-WT-030-SD-01	PR79-WT-031-SD-01	PR79-WT-032-SD-01	PR79-SD-FD04-01 (FD)
			Sampling Date	28-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	04-May-20	27-Apr-20
Zinc	Solid			0.0580 UJ	**0.0257**	**0.0844 J**	**0.0133**	**0.0200**	**0.0214**	0.00962 U	**0.0301 J**	**0.0534**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	**0.00860 J**	**0.00470 J**	**0.0100 J**	**0.00120 J**	**0.00290 J**	**0.00370 J**	**0.00310 J**	**0.00300 J**	0.0590 UJ
2-Methylnaphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0202	0.0400 UJ	0.0210 UJ	0.0570 UJ	0.00960 U	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Acenaphthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0067	0.0400 UJ	0.0210 UJ	0.0570 UJ	0.00960 U	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Acenaphthylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0059	0.0400 UJ	0.0210 UJ	0.0570 UJ	0.00960 U	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.057	0.0400 UJ	0.0210 UJ	0.0570 UJ	0.00960 U	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(a)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.108	**0.0140 J**	**0.00690 J**	**0.0270 J**	**0.00260 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	**0.0220 J**	**0.00950 J**	**0.0380 J**	**0.00390 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 UJ	0.0120 U
Benzo(b)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.19	**0.0360 J**	**0.0180 J**	**0.0740 J**	**0.00700 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(g,h,i)perylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	**0.0160 J**	**0.0120 J**	**0.0460 J**	**0.00400 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Benzo(k)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.24	**0.0180 J**	**0.00960 J**	**0.0380 J**	**0.00340 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Chrysene	Solid	USEPA Region 4 sediment screening levels - freshwater	.166	**0.00940 J**	0.0210 UJ	**0.0170 J**	0.00960 U	**0.00170 J**	**0.00290 J**	**0.00280 J**	0.0120 U	0.0120 U
Dibenz(a,h)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.033	0.0400 UJ	0.0210 UJ	**0.0150 J**	0.00960 UJ	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.423	**0.0310 J**	**0.00970 J**	**0.0420 J**	**0.00400 J**	0.00920 U	**0.00300 J**	**0.00280 J**	0.0120 U	0.0120 U
Fluorene	Solid	USEPA Region 4 sediment screening levels - freshwater	.077	0.0400 UJ	0.0210 UJ	0.0570 UJ	0.00960 U	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Indeno(1,2,3-c,d)pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.2	**0.0120 J**	**0.00860 J**	**0.0380 J**	**0.00280 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Naphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.176	0.0400 UJ	0.0210 UJ	0.0570 UJ	0.00960 U	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Pentachlorophenol	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.200 UJ	0.110 UJ	0.280 UJ	0.0480 U	0.0460 U	0.0630 U	0.0570 U	0.0600 U	0.0590 U
Phenanthrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.204	**0.0180 J**	**0.00640 J**	**0.0240 J**	**0.00240 J**	0.00920 U	0.0120 U	0.0110 U	0.0120 U	0.0120 U
Pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.195	**0.0380 J**	**0.0130 J**	**0.0550 J**	**0.00540 J**	0.00920 U	**0.00360 J**	**0.00300 J**	0.0120 U	0.0120 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1-Trichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.07	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
1,1-Dichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.02	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
1,1-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.1	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
1,2,3-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.113	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.011	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.097	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
1,2-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.095	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.164	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
1,3-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.089	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
2-Butanone (MEK)	Solid	USEPA Region 4 sediment screening levels - freshwater	7.604	**0.0640 J**	**0.0220 J**	**0.110 J**	**0.0340 J**	0.00980 U	**0.0220 J**	**0.0110 J**	0.0120 U	0.0120 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Region 4 sediment screening levels - freshwater	.073	0.0610 UJ	0.0400 UJ	0.0810 UJ	0.0110 UJ	0.00980 U	0.0200 UJ	0.0110 UJ	0.0120 UJ	0.0120 U
Acetone	Solid	USEPA Region 4 sediment screening levels - freshwater	.065	**0.410 J**	**0.180 J**	**0.540 J**	**0.0830 J**	**0.0190 J**	**0.100 J**	**0.0380 J**	0.0120 U	0.0120 U
Benzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-025	PR79-WT-026	PR79-WT-027	PR79-WT-028	PR79-WT-029	PR79-WT-030	PR79-WT-031	PR79-WT-032	PR79-WT-033
			Sample ID	PR79-WT-025-SD-01	PR79-WT-026-SD-01	PR79-WT-027-SD-01	PR79-WT-028-SD-01	PR79-WT-029-SD-01	PR79-WT-030-SD-01	PR79-WT-031-SD-01	PR79-WT-032-SD-01	PR79-SD-FD04-01 (FD)
			Sampling Date	28-Apr-20	29-Apr-20	29-Apr-20	29-Apr-20	30-Apr-20	30-Apr-20	30-Apr-20	04-May-20	27-Apr-20
Bromodichloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.21	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Bromomethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.0065	0.0240 UJ	0.0160 UJ	0.0320 UJ	0.00430 UJ	0.00390 U	0.00800 UJ	0.00430 UJ	0.00460 U	0.00500 U
Carbon disulfide	Solid	USEPA Region 4 sediment screening levels - freshwater	.0078	0.0120 UJ	**0.00320 J**	0.0160 UJ	**0.000930 J**	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.0240 UJ	0.0160 UJ	0.0320 UJ	0.00430 UJ	0.00390 U	0.00800 UJ	0.00430 UJ	0.00460 U	0.00500 U
Chloroform	Solid	USEPA Region 4 sediment screening levels - freshwater	.087	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.0240 UJ	0.0160 UJ	0.0320 UJ	0.00430 UJ	0.00390 U	0.00800 UJ	0.00430 UJ	0.00460 U	0.00500 U
cis-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.432	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Dibromochloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.198	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Ethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.29	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.035	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
m,p-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.0240 UJ	0.0160 UJ	0.0320 UJ	0.00430 UJ	0.00390 U	0.00800 UJ	0.00430 UJ	0.00460 UJ	0.00500 U
Methylene chloride	Solid	USEPA Region 4 sediment screening levels - freshwater	.018	0.0610 UJ	0.0400 UJ	0.0810 UJ	0.0110 UJ	0.00980 U	0.0200 UJ	0.0110 UJ	**0.00850 J**	0.0120 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
o-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.184	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0610 UJ	0.0400 UJ	0.0810 UJ	0.0110 UJ	0.00980 U	0.0200 UJ	0.0110 UJ	0.0120 U	0.0120 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
Toluene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.0120 UJ	0.00800 UJ	0.0160 UJ	**0.00900 J**	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 UJ	0.00250 U
trans-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.389	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Trichloroethene (TCE)	Solid	USEPA Region 4 sediment screening levels - freshwater	.078	0.0120 UJ	0.00800 UJ	0.0160 UJ	0.00220 UJ	0.00200 U	0.00400 UJ	0.00220 UJ	0.00230 U	0.00250 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.0240 UJ	0.0160 UJ	0.0320 UJ	0.00430 UJ	0.00390 U	0.00800 UJ	0.00430 UJ	0.00460 U	0.00500 U

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-033
			Sample ID	PR79-WT-033-SD-01
			Sampling Date	27-Apr-20
GENCHEM (UG/G)	**Matrix**	**Screening Limit Type**	**Limit**	
Total Organic Carbon	Solid			**4100**
GENCHEM (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**	
Sulfide	Solid			0.0890 U
GENCHEM_PH (PH UNITS)	**Matrix**	**Screening Limit Type**	**Limit**	
pH	Solid			**6.50 J**
HG (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**	
Mercury	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.0180 UJ
METAL (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**	
Aluminum	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	7700	**3200**
Antimony	Solid	USEPA Region 4 sediment screening levels - freshwater	2	**0.0290 J**
Arsenic	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.68	**0.460**
Barium	Solid	USEPA Region 4 sediment screening levels - freshwater	20	**18.9**
Beryllium	Solid	RIDEM Method 1 Direct Exposure Criteria Be only (Residential Soil)	1.5	**0.164**
Cadmium	Solid	USEPA Region 4 sediment screening levels - freshwater	1	**0.119**
Calcium	Solid			**579**
Chromium	Solid	USEPA Region 4 sediment screening levels - freshwater	43.4	**4.38**
Cobalt	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	2.3	**2.38**
Copper	Solid	USEPA Region 4 sediment screening levels - freshwater	31.6	**3.05**
Iron	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5500	**3420**
Lead	Solid	USEPA Region 4 sediment screening levels - freshwater	35.8	**3.96**
Magnesium	Solid			**902**
Manganese	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	180	**77.0**
Nickel	Solid	USEPA Region 4 sediment screening levels - freshwater	22.7	**2.80**
Potassium	Solid			**701**
Selenium	Solid	USEPA Region 4 sediment screening levels - freshwater	.8	**0.0900 J**
Silver	Solid	USEPA Region 4 sediment screening levels - freshwater	1	**0.130 J**
Sodium	Solid			60.0 U
Thallium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.078	**0.0621**
Vanadium	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	39	**8.41**
Zinc	Solid	USEPA Region 4 sediment screening levels - freshwater	121	**13.6**
METAL (UMOLES/G)	**Matrix**	**Screening Limit Type**	**Limit**	
Cadmium	Solid			**0.000420 J**
Copper	Solid			**0.0155**
Lead	Solid			**0.00564**
Nickel	Solid			**0.0101**
Silver	Solid			**0.000210 J**
Zinc	Solid			**0.0510**
SVOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**	
1,4-Dioxane (p-Dioxane)	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	5.3	0.0570 UJ
2-Methylnaphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0202	0.0110 U
Acenaphthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0067	0.0110 U
Acenaphthylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.0059	0.0110 U
Anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.057	0.0110 U
Benzo(a)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.108	0.0110 U
Benzo(a)pyrene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	.11	0.0110 U
Benzo(b)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.19	0.0110 U
Benzo(g,h,i)perylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.17	0.0110 U
Benzo(k)fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.24	0.0110 U
Chrysene	Solid	USEPA Region 4 sediment screening levels - freshwater	.166	0.0110 U
Dibenz(a,h)anthracene	Solid	USEPA Region 4 sediment screening levels - freshwater	.033	0.0110 U
Fluoranthene	Solid	USEPA Region 4 sediment screening levels - freshwater	.423	0.0110 U
Fluorene	Solid	USEPA Region 4 sediment screening levels - freshwater	.077	0.0110 U
Indeno(1,2,3-c,d)pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.2	0.0110 U
Naphthalene	Solid	USEPA Region 4 sediment screening levels - freshwater	.176	0.0110 U
Pentachlorophenol	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.0570 U
Phenanthrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.204	0.0110 U
Pyrene	Solid	USEPA Region 4 sediment screening levels - freshwater	.195	0.0110 U
VOC (MG/KG)	**Matrix**	**Screening Limit Type**	**Limit**	
1,1,1-Trichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.07	0.00220 U
1,1-Dichloroethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.02	0.00220 U
1,1-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.1	0.00220 U
1,2,3-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.113	0.00220 U
1,2,4-Trichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.011	0.00220 U
1,2,4-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.097	0.00220 U
1,2-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.095	0.00220 U
1,3,5-Trimethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.164	0.00220 U
1,3-Dichlorobenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.089	0.00220 U
2-Butanone (MEK)	Solid	USEPA Region 4 sediment screening levels - freshwater	7.604	0.0110 U
4-Methyl-2-pentanone (MIBK)	Solid	USEPA Region 4 sediment screening levels - freshwater	.073	0.0110 U

Table A-12 Summary of Detected Analytical Results in Sediment
2020 Spring SW SE PW Sampling Event
D01RI0063-02, Nike PR-79 (AECOM)

			Location	PR79-WT-033
			Sample ID	PR79-WT-033-SD-01
			Sampling Date	27-Apr-20
Acetone	Solid	USEPA Region 4 sediment screening levels - freshwater	.065	0.0110 U
Benzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00220 U
Bromodichloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.21	0.00220 U
Bromomethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.0065	0.00440 U
Carbon disulfide	Solid	USEPA Region 4 sediment screening levels - freshwater	.0078	0.00220 U
Chloroethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	1400	0.00440 U
Chloroform	Solid	USEPA Region 4 sediment screening levels - freshwater	.087	0.00220 U
Chloromethane	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	11	0.00440 U
cis-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.432	0.00220 U
Dibromochloromethane	Solid	USEPA Region 4 sediment screening levels - freshwater	.198	0.00220 U
Ethylbenzene	Solid	USEPA Region 4 sediment screening levels - freshwater	.29	0.00220 U
Isopropylbenzene (Cumene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.035	0.00220 U
m,p-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.00440 U
Methylene chloride	Solid	USEPA Region 4 sediment screening levels - freshwater	.018	0.0110 U
n-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	390	0.00220 U
n-Propylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	380	0.00220 U
o-Xylene	Solid	USEPA Region 4 sediment screening levels - freshwater	.13	0.00220 U
p-Cymene (p-Isopropyltoluene)	Solid	USEPA Region 4 sediment screening levels - freshwater	.184	0.00220 U
sec-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00220 U
tert-Butyl alcohol	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1) Alternate compounds	780	0.0110 U
tert-Butylbenzene	Solid	USEPA Res Soil RSL (TR=1E-6; THQ=0.1)	780	0.00220 U
Toluene	Solid	USEPA Region 4 sediment screening levels - freshwater	.01	0.00220 U
trans-1,2-Dichloroethene	Solid	USEPA Region 4 sediment screening levels - freshwater	.389	0.00220 U
Trichloroethene (TCE)	Solid	USEPA Region 4 sediment screening levels - freshwater	.078	0.00220 U
Vinyl chloride	Solid	RIDEM Method 1 Direct Exposure Criteria (Residential Soil)	.02	0.00440 U

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	DW-19		DW-20		DW-31		DW-33		DW-35
			Sample ID	DW-19-BC-DEC2020	DW-19-TAP-DEC2020	DW-20-BC-DEC2020	DW-20-TAP-DEC2020	DW-31-BC-DEC2020	DW-31-TAP-DEC2020	DW-33-FD02-DEC2020 (FD)	DW-33-TAP-DEC2020	DW-35-BC-DEC2020
			Sampling Date	01-Dec-20	01-Dec-20	01-Dec-20	01-Dec-20	01-Dec-20	01-Dec-20	02-Dec-20	02-Dec-20	03-Dec-20
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,1-Trichloroethane	Aqueous	2019 May EPA MCL	200	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2-Trichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethene	Aqueous	2019 May EPA MCL	7	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
1,1-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,3-Trichlorobenzene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trichlorobenzene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromo-3-chloropropane	Aqueous	2019 May EPA MCL	0.2	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromoethane (EDB)	Aqueous	2019 May EPA MCL	0.05	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichlorobenzene	Aqueous	2019 May EPA MCL	600	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloropropane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3,5-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichlorobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,4-Dichlorobenzene	Aqueous	2019 May EPA MCL	75	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
2,2-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
2-Butanone (MEK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
2-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
4-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
4-Methyl-2-pentanone (MIBK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
Acetone	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
Benzene	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromochloromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromodichloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromoform	Aqueous	2019 May EPA MCL	80	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
Bromomethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Carbon disulfide	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Carbon tetrachloride	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Chlorobenzene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Chloroethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroform	Aqueous	2019 May EPA MCL	80	**0.0540 J**	**0.0540 J**	0.250 U	0.250 U	**0.280 J**	**0.420 J**	0.250 U	0.250 U	0.250 U
Chloromethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
cis-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	DW-19		DW-20		DW-31		DW-33		DW-35
			Sample ID	DW-19-BC-DEC2020	DW-19-TAP-DEC2020	DW-20-BC-DEC2020	DW-20-TAP-DEC2020	DW-31-BC-DEC2020	DW-31-TAP-DEC2020	DW-33-FD02-DEC2020 (FD)	DW-33-TAP-DEC2020	DW-35-BC-DEC2020
			Sampling Date	01-Dec-20	01-Dec-20	01-Dec-20	01-Dec-20	01-Dec-20	01-Dec-20	02-Dec-20	02-Dec-20	03-Dec-20
Dibromochloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dibromomethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dichlorodifluoromethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Ethylbenzene	Aqueous	2019 May EPA MCL	700	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Hexachlorobutadiene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Isopropylbenzene (Cumene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
m,p-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Methyl tert-butyl ether (MTBE)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Methylene chloride	Aqueous	2019 May EPA MCL	5	1.20 UJ	1.20 UJ	1.20 UJ	1.20 U	1.20 UJ	1.20 UJ	1.20 U	1.20 U	1.20 U
Naphthalene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
n-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
n-Propylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
o-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
p-Cymene (p-Isopropyltoluene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
sec-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Styrene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
tert-Butyl alcohol	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
tert-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Tetrachloroethene (PCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Toluene	Aqueous	2019 May EPA MCL	1000	0.250 U	0.250 U	0.250 U	0.250 U	**0.260 J**	**0.580**	0.250 U	0.250 U	0.250 U
trans-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
trans-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Trichloroethene (TCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Trichlorofluoromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Vinyl chloride	Aqueous	2019 May EPA MCL	2	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Xylenes, Total	Aqueous	2019 May EPA MCL	10000	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	DW-35		DW-37	DW-39	DW-41	DW-68
			Sample ID	DW-35-FD03-DEC2020 (FD)	DW-35-TAP-DEC2020	DW-37-TAP-DEC2020	DW-39-TAP-DEC2020	DW-41-TAP-DEC2020	DW-68-TAP-DEC2020
			Sampling Date	03-Dec-20	03-Dec-20	01-Dec-20	03-Dec-20	02-Dec-20	01-Dec-20
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**						
1,1,1,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,1-Trichloroethane	Aqueous	2019 May EPA MCL	200	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2-Trichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethene	Aqueous	2019 May EPA MCL	7	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
1,1-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,3-Trichlorobenzene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trichlorobenzene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromo-3-chloropropane	Aqueous	2019 May EPA MCL	0.2	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromoethane (EDB)	Aqueous	2019 May EPA MCL	0.05	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichlorobenzene	Aqueous	2019 May EPA MCL	600	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloropropane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3,5-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichlorobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,4-Dichlorobenzene	Aqueous	2019 May EPA MCL	75	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
2,2-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
2-Butanone (MEK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
2-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
4-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
4-Methyl-2-pentanone (MIBK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
Acetone	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
Benzene	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromochloromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromodichloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromoform	Aqueous	2019 May EPA MCL	80	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
Bromomethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Carbon disulfide	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Carbon tetrachloride	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Chlorobenzene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Chloroethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroform	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	**1.50**	0.250 U	0.250 U
Chloromethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	DW-35		DW-37	DW-39	DW-41	DW-68
			Sample ID	DW-35-FD03-DEC2020 (FD)	DW-35-TAP-DEC2020	DW-37-TAP-DEC2020	DW-39-TAP-DEC2020	DW-41-TAP-DEC2020	DW-68-TAP-DEC2020
			Sampling Date	03-Dec-20	03-Dec-20	01-Dec-20	03-Dec-20	02-Dec-20	01-Dec-20
cis-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
cis-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dibromochloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dibromomethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dichlorodifluoromethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Ethylbenzene	Aqueous	2019 May EPA MCL	700	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Hexachlorobutadiene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Isopropylbenzene (Cumene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
m,p-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Methyl tert-butyl ether (MTBE)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Methylene chloride	Aqueous	2019 May EPA MCL	5	2.50 U	1.20 U	1.20 UJ	1.20 U	1.20 U	1.20 UJ
Naphthalene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
n-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
n-Propylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
o-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
p-Cymene (p-Isopropyltoluene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
sec-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Styrene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
tert-Butyl alcohol	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
tert-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Tetrachloroethene (PCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Toluene	Aqueous	2019 May EPA MCL	1000	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
trans-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
trans-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Trichloroethene (TCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	**0.190 J**	0.250 U	0.250 U
Trichlorofluoromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Vinyl chloride	Aqueous	2019 May EPA MCL	2	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Xylenes, Total	Aqueous	2019 May EPA MCL	10000	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided.
Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.
R - Rejected - The data is unusable.

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	NIKE-1-AC	NIKE-1-BC		NIKE-1-TAP	ROU-1-AC	ROU-1-BC	ROU-1-TAP	ROU-2-AC	ROU-2-BC
			Sample ID	NIKE-1-AC_DEC2020	NIKE-1-BC_DEC2020	NIKE-1-FD01_DEC2020 (FD)	NIKE-1-TAP_DEC2020	ROU-1-AC_DEC2020	ROU-1-BC_DEC2020	ROU-1-TAP_DEC2020	ROU-2-AC_DEC2020	ROU-2-BC_DEC2020
			Sampling Date	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,3-Dichlorobenzene	Aqueous			0.480 UJ	0.500 UJ	0.490 UJ	0.490 UJ	0.500 UJ	0.490 UJ	0.490 UJ	0.500 UJ	0.500 UJ
2,2'-Oxybis(1-chloropropane)	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
2,4,5-Trichlorophenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
2,4,6-Trichlorophenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
2,4-Dichlorophenol	Aqueous			1.40 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
2,4-Dimethylphenol	Aqueous			2.40 UJ	2.50 UJ	2.40 UJ	2.40 UJ	2.50 UJ	2.50 UJ	2.50 UJ	2.50 UJ	2.50 UJ
2,4-Dinitrophenol	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U	5.00 U	4.90 U	4.90 U	5.00 U	5.00 U
2,4-Dinitrotoluene	Aqueous			0.710 U	0.740 U	0.730 U	0.730 U	0.740 U	0.740 U	0.740 U	0.740 U	0.750 U
2,6-Dinitrotoluene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
2-Chloronaphthalene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
2-Chlorophenol	Aqueous			2.40 UJ	2.50 UJ	2.40 UJ	2.40 UJ	2.50 UJ	2.50 UJ	2.50 UJ	2.50 UJ	2.50 UJ
2-Methylnaphthalene	Aqueous			0.950 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	1.00 UJ
2-Methylphenol (o-Cresol)	Aqueous			0.950 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	1.00 UJ
2-Nitroaniline	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U	5.00 U	4.90 U	4.90 U	5.00 U	5.00 U
2-Nitrophenol	Aqueous			1.90 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ
3,3'-Dichlorobenzidine	Aqueous			0.950 U	0.990 U	0.980 U	0.980 U	0.990 U	0.980 U	0.980 U	0.990 U	1.00 U
3-Nitroaniline	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U	5.00 U	4.90 U	4.90 U	5.00 U	5.00 U
4,6-Dinitro-2-methylphenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
4-Bromophenyl phenyl ether	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
4-Chloro-3-methylphenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
4-Chloroaniline	Aqueous			1.90 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ	2.00 UJ
4-Chlorophenyl phenyl ether	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
4-Nitroaniline	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U	5.00 U	4.90 U	4.90 U	5.00 U	5.00 U
4-Nitrophenol	Aqueous			1.90 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Acenaphthene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Acenaphthylene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Anthracene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Benzo(a)anthracene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Benzo(a)pyrene	Aqueous	2019 May EPA MCL	0.2	0.0930 U	0.0950 U	0.0940 U	0.0940 U	0.0950 U	0.0940 U	0.0930 U	0.0950 U	0.0960 U
Benzo(b)fluoranthene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Benzo(g,h,i)perylene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Benzo(k)fluoranthene	Aqueous			0.950 U	0.990 U	0.980 U	0.980 U	0.990 U	0.980 U	0.980 U	0.990 U	1.00 U
Benzyl butyl phthalate	Aqueous			0.480 UJ	0.500 UJ	0.490 UJ	0.490 UJ	0.500 UJ	0.490 UJ	0.490 UJ	0.500 UJ	0.500 UJ
Bis(2-chloroethoxy)methane	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Bis(2-chloroethyl) ether (2-Chloroethyl ether)	Aqueous			0.480 UJ	0.500 UJ	0.490 UJ	0.490 UJ	0.500 UJ	0.490 UJ	0.490 UJ	0.500 UJ	0.500 UJ
Bis(2-ethylhexyl)phthalate	Aqueous	2019 May EPA MCL	6	0.930 U	0.710 U	0.710 U	0.710 U	**0.960 J**	**3.00 J**	0.700 U	0.950 U	0.720 U
Carbazole	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Chrysene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Cresols, m- & p-	Aqueous			0.950 U	0.990 U	0.980 U	0.980 U	0.990 U	0.980 U	0.980 U	0.990 U	1.00 U
Dibenz(a,h)anthracene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	NIKE-1-AC	NIKE-1-BC		NIKE-1-TAP	ROU-1-AC	ROU-1-BC	ROU-1-TAP	ROU-2-AC	ROU-2-BC
			Sample ID	NIKE-1-AC_DEC2020	NIKE-1-BC_DEC2020	NIKE-1-FD01_DEC2020 (FD)	NIKE-1-TAP_DEC2020	ROU-1-AC_DEC2020	ROU-1-BC_DEC2020	ROU-1-TAP_DEC2020	ROU-2-AC_DEC2020	ROU-2-BC_DEC2020
			Sampling Date	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20
Dibenzofuran	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Diethyl phthalate	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Dimethyl phthalate	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Di-n-butyl phthalate	Aqueous			0.950 U	0.990 U	0.980 U	0.980 U	0.990 U	0.980 U	0.980 U	0.990 U	1.00 U
di-n-Octyl phthalate	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Fluoranthene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Fluorene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Hexachlorobenzene	Aqueous	2019 May EPA MCL	1	0.0930 U	0.0950 U	0.0940 U	0.0940 U	0.0950 U	0.0940 U	0.0930 U	0.0950 U	0.0960 U
Hexachlorobutadiene	Aqueous			0.950 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	1.00 UJ
Hexachlorocyclopentadiene	Aqueous	2019 May EPA MCL	50	9.50 UJ	9.90 UJ	9.80 UJ	9.80 UJ	9.90 UJ	9.80 UJ	9.80 UJ	9.90 UJ	10.0 UJ
Hexachloroethane	Aqueous			0.950 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	1.00 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Isophorone	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Naphthalene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Nitrobenzene	Aqueous			0.950 U	0.990 U	0.980 U	0.980 U	0.990 U	0.980 U	0.980 U	0.990 U	1.00 U
N-Nitrosodi-n-propylamine	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
N-Nitrosodiphenylamine	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Pentachlorophenol	Aqueous	2019 May EPA MCL	1	0.470 UJ	0.480 UJ	0.470 UJ	0.470 UJ	0.480 UJ	0.470 R	0.470 UJ	0.480 R	0.480 UJ
Phenanthrene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
Phenol	Aqueous			0.950 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	0.980 UJ	0.980 UJ	0.990 UJ	1.00 UJ
Pyrene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U	0.500 U	0.490 U	0.490 U	0.500 U	0.500 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**									
1,1,1,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,1-Trichloroethane	Aqueous	2019 May EPA MCL	200	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2-Trichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethene	Aqueous	2019 May EPA MCL	7	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
1,1-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,3-Trichlorobenzene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trichlorobenzene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromo-3-chloropropane	Aqueous	2019 May EPA MCL	0.2	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromoethane (EDB)	Aqueous	2019 May EPA MCL	0.05	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichlorobenzene	Aqueous	2019 May EPA MCL	600	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloropropane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3,5-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichlorobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	NIKE-1-AC	NIKE-1-BC		NIKE-1-TAP	ROU-1-AC	ROU-1-BC	ROU-1-TAP	ROU-2-AC	ROU-2-BC
			Sample ID	NIKE-1-AC_DEC2020	NIKE-1-BC_DEC2020	NIKE-1-FD01_DEC2020 (FD)	NIKE-1-TAP_DEC2020	ROU-1-AC_DEC2020	ROU-1-BC_DEC2020	ROU-1-TAP_DEC2020	ROU-2-AC_DEC2020	ROU-2-BC_DEC2020
			Sampling Date	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20
1,4-Dichlorobenzene	Aqueous	2019 May EPA MCL	75	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
2,2-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
2-Butanone (MEK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U	**1.10 J**	1.20 U	1.20 U	1.20 U	1.20 U
2-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
4-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
4-Methyl-2-pentanone (MIBK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
Acetone	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	**18.0 J**	**2.20 J**	**1.70 J**	**1.30 J**	**2.60 J**
Benzene	Aqueous	2019 May EPA MCL	5	**0.0530 J**	0.250 U	0.250 U	0.250 U	**0.620**	**0.140 J**	0.250 U	0.250 U	**0.900**
Bromobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromochloromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromodichloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Bromoform	Aqueous	2019 May EPA MCL	80	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
Bromomethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Carbon disulfide	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Carbon tetrachloride	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Chlorobenzene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Chloroethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroform	Aqueous	2019 May EPA MCL	80	0.250 U	**0.0500 J**	0.250 U	0.250 U	**0.0470 J**	**0.200 J**	0.250 U	0.250 U	0.250 U
Chloromethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	70	0.250 U	**0.180 J**	**0.180 J**	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
cis-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dibromochloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dibromomethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Dichlorodifluoromethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Ethylbenzene	Aqueous	2019 May EPA MCL	700	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Hexachlorobutadiene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Isopropylbenzene (Cumene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	**0.0840 J**	0.250 U	0.250 U	0.250 U	**0.150 J**
m,p-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Methyl tert-butyl ether (MTBE)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Methylene chloride	Aqueous	2019 May EPA MCL	5	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
Naphthalene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
n-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
n-Propylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
o-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
p-Cymene (p-Isopropyltoluene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
sec-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Styrene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
tert-Butyl alcohol	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
tert-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Tetrachloroethene (PCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Toluene	Aqueous	2019 May EPA MCL	1000	0.250 U	0.250 U	0.250 U	0.250 U	**0.0870 J**	0.250 U	0.250 U	0.250 U	0.250 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	NIKE-1-AC	NIKE-1-BC		NIKE-1-TAP	ROU-1-AC	ROU-1-BC	ROU-1-TAP	ROU-2-AC	ROU-2-BC
			Sample ID	NIKE-1-AC_DEC2020	NIKE-1-BC_DEC2020	NIKE-1-FD01_DEC2020 (FD)	NIKE-1-TAP_DEC2020	ROU-1-AC_DEC2020	ROU-1-BC_DEC2020	ROU-1-TAP_DEC2020	ROU-2-AC_DEC2020	ROU-2-BC_DEC2020
			Sampling Date	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20
trans-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
trans-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Trichloroethene (TCE)	Aqueous	2019 May EPA MCL	5	**0.190 J**	**8.80**	**9.30**	0.250 U	0.250 U	**0.230 J**	0.250 U	0.250 U	**0.220 J**
Trichlorofluoromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Vinyl chloride	Aqueous	2019 May EPA MCL	2	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Xylenes, Total	Aqueous	2019 May EPA MCL	10000	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U	0.750 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	ROU-2-TAP	ROU-3-AC	ROU-3-BC	ROU-3-TAP
			Sample ID	ROU-2-TAP_DEC2020	ROU-3-AC_DEC2020	ROU-3-BC_DEC2020	ROU-3-TAP_DEC2020
			Sampling Date	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20
SVOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**				
1,3-Dichlorobenzene	Aqueous			0.480 UJ	0.500 UJ	0.490 UJ	0.490 UJ
2,2'-Oxybis(1-chloropropane)	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
2,4,5-Trichlorophenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U
2,4,6-Trichlorophenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U
2,4-Dichlorophenol	Aqueous			1.40 U	1.50 U	1.50 U	1.50 U
2,4-Dimethylphenol	Aqueous			2.40 UJ	2.50 UJ	2.40 UJ	2.40 UJ
2,4-Dinitrophenol	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U
2,4-Dinitrotoluene	Aqueous			0.710 U	0.750 U	0.730 U	0.730 U
2,6-Dinitrotoluene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
2-Chloronaphthalene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
2-Chlorophenol	Aqueous			2.40 UJ	2.50 UJ	2.40 UJ	2.40 UJ
2-Methylnaphthalene	Aqueous			0.950 UJ	1.00 UJ	0.980 UJ	0.980 UJ
2-Methylphenol (o-Cresol)	Aqueous			0.950 UJ	1.00 UJ	0.980 UJ	0.980 UJ
2-Nitroaniline	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U
2-Nitrophenol	Aqueous			1.90 UJ	2.00 UJ	2.00 UJ	2.00 UJ
3,3'-Dichlorobenzidine	Aqueous			0.950 U	1.00 U	0.980 U	0.980 U
3-Nitroaniline	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U
4,6-Dinitro-2-methylphenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U
4-Bromophenyl phenyl ether	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
4-Chloro-3-methylphenol	Aqueous			2.40 U	2.50 U	2.40 U	2.40 U
4-Chloroaniline	Aqueous			1.90 UJ	2.00 UJ	2.00 UJ	2.00 UJ
4-Chlorophenyl phenyl ether	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
4-Nitroaniline	Aqueous			4.80 U	5.00 U	4.90 U	4.90 U
4-Nitrophenol	Aqueous			1.90 U	2.00 U	2.00 U	2.00 U
Acenaphthene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Acenaphthylene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Anthracene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Benzo(a)anthracene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Benzo(a)pyrene	Aqueous	2019 May EPA MCL	0.2	0.0940 U	0.0950 U	0.0950 UJ	0.0930 U
Benzo(b)fluoranthene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Benzo(g,h,i)perylene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Benzo(k)fluoranthene	Aqueous			0.950 U	1.00 U	0.980 U	0.980 U
Benzyl butyl phthalate	Aqueous			0.480 UJ	0.500 UJ	0.490 UJ	0.490 UJ
Bis(2-chloroethoxy)methane	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Bis(2-chloroethyl) ether (2-Chloroethyl ether)	Aqueous			0.480 UJ	0.500 UJ	0.490 UJ	0.490 UJ
Bis(2-ethylhexyl)phthalate	Aqueous	2019 May EPA MCL	6	**4.20 J**	**2.20 J**	0.950 U	**1.30 J**
Carbazole	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Chrysene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Cresols, m- & p-	Aqueous			0.950 U	1.00 U	0.980 U	0.980 U
Dibenz(a,h)anthracene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Dibenzofuran	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Diethyl phthalate	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Dimethyl phthalate	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Di-n-butyl phthalate	Aqueous			0.950 U	1.00 U	0.980 U	0.980 U
di-n-Octyl phthalate	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Fluoranthene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Fluorene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Hexachlorobenzene	Aqueous	2019 May EPA MCL	1	0.0940 U	0.0950 U	0.0950 U	0.0930 U
Hexachlorobutadiene	Aqueous			0.950 UJ	1.00 UJ	0.980 UJ	0.980 UJ
Hexachlorocyclopentadiene	Aqueous	2019 May EPA MCL	50	9.50 UJ	10.0 UJ	9.80 UJ	9.80 UJ
Hexachloroethane	Aqueous			0.950 UJ	1.00 UJ	0.980 UJ	0.980 UJ
Indeno(1,2,3-c,d)pyrene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Isophorone	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Naphthalene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Nitrobenzene	Aqueous			0.950 U	1.00 U	0.980 U	0.980 U
N-Nitrosodi-n-propylamine	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
N-Nitrosodiphenylamine	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Pentachlorophenol	Aqueous	2019 May EPA MCL	1	0.470 UJ	0.480 UJ	0.480 UJ	0.470 UJ
Phenanthrene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
Phenol	Aqueous			0.950 UJ	1.00 UJ	0.980 UJ	0.980 UJ
Pyrene	Aqueous			0.480 U	0.500 U	0.490 U	0.490 U
VOC (UG/L)	**Matrix**	**Screening Limit Type**	**Limit**				
1,1,1,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,1,1-Trichloroethane	Aqueous	2019 May EPA MCL	200	0.250 U	0.250 U	0.250 U	0.250 U
1,1,2,2-Tetrachloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,1,2-Trichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,1-Dichloroethene	Aqueous	2019 May EPA MCL	7	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
1,1-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,2,3-Trichlorobenzene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trichlorobenzene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	0.250 U	0.250 U
1,2,4-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromo-3-chloropropane	Aqueous	2019 May EPA MCL	0.2	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dibromoethane (EDB)	Aqueous	2019 May EPA MCL	0.05	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichlorobenzene	Aqueous	2019 May EPA MCL	600	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloroethane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U
1,2-Dichloropropane	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U
1,3,5-Trimethylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U

Table A-13 Summary of Detected Analytical Results in Drinking Water
PR-79, December 2020 Sampling Event
D01RI0063-02, Nike PR-79 (Internal)

			Location	ROU-2-TAP	ROU-3-AC	ROU-3-BC	ROU-3-TAP
			Sample ID	ROU-2-TAP_DEC2020	ROU-3-AC_DEC2020	ROU-3-BC_DEC2020	ROU-3-TAP_DEC2020
			Sampling Date	30-Nov-20	30-Nov-20	30-Nov-20	30-Nov-20
1,3-Dichlorobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,3-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
1,4-Dichlorobenzene	Aqueous	2019 May EPA MCL	75	0.250 U	0.250 U	0.250 U	0.250 U
2,2-Dichloropropane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
2-Butanone (MEK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U
2-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
4-Chlorotoluene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
4-Methyl-2-pentanone (MIBK)	Aqueous			1.20 U	1.20 U	1.20 U	1.20 U
Acetone	Aqueous			**1.40 J**	1.20 UJ	1.20 UJ	1.20 UJ
Benzene	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U
Bromobenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Bromochloromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Bromodichloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U
Bromoform	Aqueous	2019 May EPA MCL	80	0.250 UJ	0.250 UJ	0.250 UJ	0.250 UJ
Bromomethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Carbon disulfide	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Carbon tetrachloride	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U
Chlorobenzene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U
Chloroethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U
Chloroform	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U
Chloromethane	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	70	0.250 U	0.250 U	**0.460 J**	0.250 U
cis-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Dibromochloromethane	Aqueous	2019 May EPA MCL	80	0.250 U	0.250 U	0.250 U	0.250 U
Dibromomethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Dichlorodifluoromethane	Aqueous			0.500 UJ	0.500 UJ	0.500 UJ	0.500 UJ
Ethylbenzene	Aqueous	2019 May EPA MCL	700	0.250 U	0.250 U	0.250 U	0.250 U
Hexachlorobutadiene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Isopropylbenzene (Cumene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
m,p-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Methyl tert-butyl ether (MTBE)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Methylene chloride	Aqueous	2019 May EPA MCL	5	1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
Naphthalene	Aqueous			0.500 U	0.500 U	0.500 U	0.500 U
n-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
n-Propylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
o-Xylene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
p-Cymene (p-Isopropyltoluene)	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
sec-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Styrene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U
tert-Butyl alcohol	Aqueous			1.20 UJ	1.20 UJ	1.20 UJ	1.20 UJ
tert-Butylbenzene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Tetrachloroethene (PCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	0.250 U	0.250 U
Toluene	Aqueous	2019 May EPA MCL	1000	0.250 U	0.250 U	0.250 U	0.250 U
trans-1,2-Dichloroethene	Aqueous	2019 May EPA MCL	100	0.250 U	0.250 U	0.250 U	0.250 U
trans-1,3-Dichloropropene	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Trichloroethene (TCE)	Aqueous	2019 May EPA MCL	5	0.250 U	0.250 U	**3.10**	0.250 U
Trichlorofluoromethane	Aqueous			0.250 U	0.250 U	0.250 U	0.250 U
Vinyl chloride	Aqueous	2019 May EPA MCL	2	0.500 U	0.500 U	0.500 U	0.500 U
Xylenes, Total	Aqueous	2019 May EPA MCL	10000	0.750 U	0.750 U	0.750 U	0.750 U

Notes:
Detected results appear in bold font
Highlighted cells indicate detections that exceed the selected screening levels. In cases in which multiple screening limit types appear on the report, the most conservative available limit is used for data comparison.

µg/L - micrograms per liter
mg/L - milligrams per liter
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

FD - Field Duplicate

J - The reported result is an estimated value.
U - Not detected; the compound/analyte was analyzed for, but not detected above the Limit of Detection (LOD) unless otherwise noted.
UJ - Qualifier indicates that the target analyte was not detected above the method detection limit. However, the reported detection limit is approximate and may or may not represent the actual limit of detection.
X - The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Appendix B

Field Instrument Calibration Logs

US Environmental Rental Corporation

(888) 550-8100 www.usenvironmental.com

166 Riverview Ave, Waltham, MA 02453 (781) 899-1560
91 Prestige Park Circle, Suite 5, East Hartford, CT 06108 (860) 289-8700
5C South Gold Dr, Hamilton, NJ 08691 (609) 570-8555
1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200
781 Industrial Dr, Elmhurst, IL 60126 (630) 501-1847

Order No.: R-43655
Date: 4/17/2020
Technician: BP

YSI

Company: AECOM
Contact: JOHN
Phone #: #N/A

Packing List

Item	Serial Number	Tech	QC
556	0	✓	
Handheld Display	15D101641	✓	

Item	Tech	QC	Item	Tech	QC
Cable 12 '	✓		AC Adaptor		
Flow Cell	✓		Stand		
Barb Kit	✓		D.O Kit	✓	
Storage / Cal Cup	✓		Calibration Kit	✓	
Sensor Guard	✓				
Manual	✓				
Sonde Cap					
Software					
Extra Batteries	✓				
Display Comm. Cable	✓				
Sonde Comm. Cable					

Calibration Report

556			0	
Parameter	Accuracy	Before	After	Lot #
Conductivy 1000 µs/cm	(+/-.5%)	997	1000	9GD788
pH 7 Buffer	(+/- .2)	7.40	7.00	9GC686
pH mV for 7 Buffer	(0 +/- 50)		-23.0	
pH 4 Buffer	(+/- .2)	4.16	4.00	9GC044
pH mV for 4 Buffer	(180 +/- 50)		140.0	
pH 10 Buffer	(+/- .2)	9.97	10.00	9GC750
pH mV for 10 Buffer	(-180 +/- 50)		-157.0	
ORP mV, 237.5	(+/- 20 mV)	223.0	238.00	9G1660
DO 100% Sat	(+/- 2%)	104.0%	100.0%	
0% DO Check	(+/- 2%)		1.80	9GG533
Turbidity 0 NTU	(+/- 5%)			19E1917011E
Turbidity 126 NTU	(+/- 5%)			

This document certifies that US Environmental Rental Corporation has provided this rental equipment and all accessories in good working order. It is the renter's responsibility to: a) review all included items upon receipt, b) verify that all items are in acceptable condition and function properly, and c) contact a US Environmental associate immediately if any item is missing, damaged, and/or not functioning properly. Any delay in notifying US Environmental will be considered as the Renter taking responsibility for such missing, damaged, and/or malfunctioning item.

Missing, damaged, and/or malfunctioning equipment and accessories will result in additional fees.

US Environmental Rental Corporation

(888) 550-8100 www.usenvironmental.com

166 Riverview Ave, Waltham, MA 02453 (781) 899-1560
91 Prestige Park Circle, Suite 5, East Hartford, CT 06108 (860) 289-8700
5C South Gold Dr, Hamilton, NJ 08691 (609) 570-8555
1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200

Order No.: R43979
Date: 4/24/2020
Technician: HA

Company: AECOM
Contact: JOHN SHANNON
Phone #: #N/A

Packing List

Item	Serial Number	Included	QC
MiniRAE 3000	592-914437	✓	
Manual		✓	
Charger		✓	
Probe Tip		✓	
Alkaline Battery Pack		✓	
External Filters		✓	
Software			
Comm. Cable			
Regulator		✓	
Tedlar Bag		✓	
Calibration Gas		✓	
Tube Holder			
Zero Tubes			

Calibration Report

Item		Information	
MiniRAE 3000	592-914437		
Calibration Gas:		*Isobutylene*	
Lot Number:		4931808	
Span Setting:		*100.00*	*ppm*
Correction Factor:		*1.00*	
Zero Reading:		*0.00*	*ppm*
Span Reading:		*100.00*	*ppm*
Post-Cal Bump Test:		*100.00*	*ppm*
Lamp		*10.6 eV*	

Need help with the calibrating your PID?
We have "How To" Videos on our website. Use your smart phone's QR Code reader to find our videos at: ***usenvironmental.com/technical-support/videos/***

This document certifies that US Environmental Rental Corporation has provided this rental equipment and all accessories in good working order. It is the renter's responsibility to: a) review all included items upon receipt, b) verify that all items are in acceptable condition and function properly, and c) contact a US Environmental associate immediately if any item is missing, damaged, and/or not functioning properly. Any delay in notifying US Environmental will be considered as the Renter taking responsibility for such missing, damaged, and/or malfunctioning item.

Missing, damaged, and/or malfunctioning equipment and accessories will result in additional fees.

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/27/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shannon

PID	Model: MiniRAE 3000				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0830	Time: 1630	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.2ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	115-11-7 4003103	Initials: 99.1ppm	Value: 99.7ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/27/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: AB / JW

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials.	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials.	Value:	

WATER QUALITY METER	Model: YSI 556MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641 / 115562-4M						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH	4	10/21	965702	Initials: JW	Value: 4.06	
	Turbidity (NTU)	<10	6/21	2390		Value: 0.02	
	Conductivity (mS/cm)	1	4/21	76D788		Value: 891	
	ORP	238	8/20	96K349		Value: 232.5	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7	2/22	06B276	Initials: JW	Value: 6.84	
	Turbidity (NTU)	100	6/21	2390		Value: 97.2	
	Conductivity (mS/cm)					Value:	
		10	2/22	06B273		9.84	

Additional Remarks:
SpCo outside range. Unit recalibrated before next use

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/28/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shaney

PID	Model: MiniRAE 3000				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1700	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	02/2023	4931808	Initials: 98.8 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/29/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: TO.V7 W.vel

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS 15D101641				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: SONDE 115562-4M						
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1500	Time:
First Point Calibration (Auto)	pH	4	OCT 21	96J722	Initials: TO	Value: 3.88	
	Turbidity (NTU)	0.02 / 0.02	6/21	239D		Value: 0.02	
	Conductivity (mS/cm)	1000 US/cm	April 2020	76D788		Value: 1005	
	ORP	238MV	AUG 20	96K349		Value: 235.4	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: –	
Second Piont Calibration	pH 7	~~100 / 101~~	~~5/21~~ 2/22	06B276 ~~239D~~	Initials: TO	Value: 6.81	
	Turbidity (NTU)	100 / 101	5/21	239D		Value: 99.1	
	Conductivity (mS/cm)	–	–	–		Value: –	
		10	2/22	06B273		9.93	

Additional Remarks:

pH 10 EXP FEB 22 LOT 06B273

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/29/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Sherman

PID	Model: Mini RAE 3000				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0720	Time: 1700	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	isobutylene (Calibration Gas)	2/23	4931808	Initials: 98.8	Value: 100.1	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/29/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: TOM Wenley

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS ISD 101641 / Equipment ID #: 115562-4M SONDE HANDHELD MEDIA				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0830	Time: 1600	Time:
First Point Calibration (Auto)	pH	9	10/21	9GJ702	Initials:	Value: 3.91	
	Turbidity (NTU)	< 0.10 NTU	5/21	239D	TW	Value: 20 NTU / 18.5 NTU	
	Conductivity (mS/cm)	1000 uS/cm	4/20	7GD788		Value: 1090	
	ORP	~~1000 uS/cm~~ 230 mV	~~4/20~~ 8/20	9GK749		Value: 221.4	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Piont Calibration	pH	10	2/22	0GB273	Initials:	Value: 10.07	
	Turbidity (NTU)	100 NTU	5/21	239D	TW	Value: 800 NTU / 716 NTU	
	Conductivity (mS/cm)	—	—	—		Value: —	
		10	2/22	0GB273		9.96	

Additional Remarks:

SpCo out of range during calibration check. Unit was recalibrated prior to next use.

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/30/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Thapion

PID	Model: Mini RAE 3000				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0720	Time: 1650	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JT 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100.0 (Calibration Gas)	2/23	49318058	Initials: JT 100.0 ppm	Value: 99.9 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 4/30/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: AKB

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641 / 115262-4M						
	Parameter	Standard	Exp. Date	Lot #	Time: 0715	Time: 1600	Time:
First Point Calibration (Auto)	pH	4.0	10/21	9GJ702	Initials: AKB	Value: 4.05	
	Turbidity (NTU)	<0.10	6/21	2391D		Value: 0.4	
	Conductivity (mS/cm)	1.0	4/20	76D788		Value: 8.93	
	ORP	238	8/20	98K349		Value: 231.9	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7.00	2/22	0GB276	Initials: AKB	Value: 6.76	
	Turbidity (NTU)	100	6/21	2391D		Value: 98.0	
	Conductivity (mS/cm)	—	—	—		Value: —	
		10.0	2/22	0GB273	AKB	9.90	

Additional Remarks:
SpCo. out of range during check. Unit was recalibrated for SpCo.

EQUIPMENT CALIBRATION DAILY LOG

Date: ~~4/27/20~~ 05/01/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: AKB

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: 15D101641 YSI 556MPS/660XL / Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1600	Time:
First Point Calibration (Auto)	pH	9GJ702	10/21	4.0	Initials: AKB	Value: 4.05	
	Turbidity (NTU)	0.02 NTU	5/21	239D		Value: 0.02	
	Conductivity (mS/cm)	7GD788	4/20	1.0		Value: 1.005	
	ORP	9GK349	8/20	238		Value: 235	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	0GB276	2/22	7.00	Initials: AKB	Value: 7.05	
	Turbidity (NTU)	100 NTU	5/21	239D		Value: 105	
	Conductivity (mS/cm)	7GD788	4/20	—		Value: —	
	pH	0GB273	2/22	10.0		9.98	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/1/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John O'Hayden

PID	Model: MiniRAE 3000				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0715	Time: 1700	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JO. 0.0 ppm	Value: JO. 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	115-11-7 4303183	Initials: J. 100.0 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/04/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shannon - PID

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0720	Time: 1700	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0	Value: JS 0.0	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	isobutylene 2/2023	4003189	Initials: JS 99.4	Value: JS 100.0	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/4/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: TWC

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556MPS 15D101641 / 1155505-17M13 Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0655	Time: 1530	Time:
First Point Calibration (Auto)	pH	4	10/2120	96J702	Initials: TW	Value: 4.10	
	Turbidity (NTU)	~~1000~~ 50 NTU	5/2020	LT 2391		Value: 0.02	
	Conductivity (mS/cm)	1000 µS/cm	4/2020	76D788		Value: 910	
	ORP	238 mV	8/2020	96K349		Value: 232.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7	2/2022	06B276	Initials: TW	Value: 6.83	
	Turbidity (NTU)	800 NTU	5/2021	LT 2390		Value: 778	
	Conductivity (mS/cm)	—	—	—		Value: —	
		10	2/2022	06B273		9.83	

Additional Remarks:
SpCo out of range during evening check. Unit will be recalibrated prior to next use.

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/05/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shayler

PID	Model: Mini RAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0720	Time: 1610	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: JS 99.1 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/5/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: TWR

PID	Model: YSI 556 MPS 15D101641/115565-17M13				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS 15D101641/115565-17M13				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time:	Time:
First Point Calibration (Auto)	pH	4	10/2021	9E5702	Initials: TWR	Value: 4.08	
	Turbidity (NTU)	20 NTU	9/2020	LT2310		Value: 18.4	
	Conductivity (mS/cm)	1	4/2020	76D788		Value: 920	
	ORP	238	8/2020	96K349		Value: 228.1	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7	2/2022	068276	Initials: TWR	Value: 7.10	
	Turbidity (NTU)	800	5/2021	LT2390		Value: 752	
	Conductivity (mS/cm)	—	—	—		Value: —	
		10	2/2022	068273		10.03	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/6/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: TLK JC

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (If necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS 15D101641 / 115565-17M13				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (If necessary)
	Equipment ID #: GEOTECH TURBIDIMETER 17061387						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1630	Time:
First Point Calibration (Auto)	pH	4	10/2021	96J702	Initials: TW	Value: 4.04	
	Turbidity (NTU)	<0.10	5/2021	LT 239D		Value: 0.02	
	Conductivity (mS/cm)	1	4/2020	76D788		Value: 978	
	ORP	238	8/2020	96K349		Value: 232	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7	2/2022	06B276	Initials: JS	Value: 7.03	
	Turbidity (NTU)	100	5/2021	LT 239D		Value: 97.4	
	Conductivity (mS/cm)	—	—	—		Value: —	
		10	2/2022	00B273	JS	9.9	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05/06/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: Mini RAE 3000 11.7EV Equipment ID #: 592-914437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1640	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: JS 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: JS 100.0 ppm	Value: JS 100.0 ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Piont Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05/07/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. J[illegible]

PID	Model: Mini RAE 3000 11.7 EV Equipment ID #: 592-914437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0715	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 102.7 ppm	Value: 99.3 ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-08-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shaylan

PID	Model: Mini RAE 3000 11.7EV Equipment ID #: 592-914437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0715	Time: 1630	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: [initials] 0.0 ppm	Value: [initials] 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 99.5 ppm	Value: [initials] 99.3 ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Piont Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/8/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: DP

PID	Model: — / Equipment ID #: —				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Portable DI				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, 115562-4M / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1400	Time:
First Point Calibration (Auto)	pH	7.00	2/2022	0GB276	Initials: DP	Value: 7.10	
	Turbidity (NTU)	<0.10	6/2021	LT239D		Value: 0.02	
	Conductivity (mS/cm)	1000	4/2020	7GD788		Value: 957	
	ORP	~~400~~ 238	8/2020	9GK349		Value: 228	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4.00	10/2021	9GJ702	Initials: DP	Value: 4.00	
	Turbidity (NTU)	100	5/2021	LT239D		Value: 752	(800 NTU)
	Conductivity (mS/cm)	Ø (DI)	NA	NA		Value: —	—
	pH	10.00	2/2022	0GB273		9.97	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/4/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: [illegible]

PID	Model: Mike RAE 3000 11.7EV Equipment ID #: 592-914437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: [illegible]	Time: 1510	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: [illegible] 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4002183	Initials: 99.3 ppm	Value: [illegible] 98.3 ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Plont Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5-11-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: CH

PID	Model: ~~YSI 556 (MH)~~				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: ~~1510 (MH)~~						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	C6 NA	Initials: 5-11-2020	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641						
	Parameter	Standard	Exp. Date	Lot #	Time: 0810	Time: 1520	Time:
First Point Calibration (Auto)	pH	7.00	2/2022	0GB276	Initials: MH	Value: 7.06	
	Turbidity (NTU)	<0.10	5/2021	LTI390		Value: 0.22	
	Conductivity (mS/cm)	1.000	4/2020	7GD708		Value: 989	
	ORP	238	8/2020	9GK349		Value: 241.3	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 9.23	
Second Point Calibration	pH	4.00	10/2021	9GJ702	Initials: MH	Value: 4.13	
	Turbidity (NTU)	100	5/2021	LT239D		Value: 103	
	Conductivity (mS/cm)	0 (DI)	NA	NA		Value: 6	
	pH	10.00	2/2022	0GB273		10.01	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/12/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: JS

PID	Model: MiniRAE3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0735	Time: 1400	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: JS 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4033183	Initials: JS 99.4 ppm	Value: JS 99.5 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/12/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: DP

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Portable Turb				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641 / 15562-4M / 17061359						
	Parameter	Standard	Exp. Date	Lot #	Time: 0810	Time: 1600	Time:
First Point Calibration (Auto)	pH	7.00	2/2022	06B276	Initials: DP	Value: 6.89	
	Turbidity (NTU)	20	9/2020	LT231D		Value: 18.2	
	Conductivity (mS/cm)	1000	4/2020	76D758		Value: 1182	
	ORP	238	5/2020	16K349		Value: 236.2	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4.00	12/2021	963702	Initials: DP	Value: 4.35	
	Turbidity (NTU)	800	6/2021	LT239D		Value: 765	
	Conductivity (mS/cm)	0	NA	D.I.		Value: —	
		10.00	2/2022	06B273		9.92	

Additional Remarks: SpCo out of range. Unit will be recalibrated prior to use

US Environmental Rental Corporation

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1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200
781 Industrial Dr, Elmhurst, IL 60126 (630) 501-1647

Order No.: R44816
Date: 5/13/2020
Technician: RR

YSI

Company: AECOM
Contact: DYLAN
Phone #: #N/A

Packing List

Item	Serial Number	Tech	QC
556	0	✓	
Handheld Display	08J100029	✓	

Item	Tech	QC	Item	Tech	QC
Cable 12 '	✓		AC Adaptor		
Flow Cell	✓		Stand		
Barb Kit	✓		D.O Kit	✓	
Storage / Cal Cup	✓		Calibration Kit	✓	
Sensor Guard	✓				
Manual					
Sonde Cap					
Software					
Extra Batteries	✓				
Display Comm. Cable	✓				
Sonde Comm. Cable					

Calibration Report

556			0	
Parameter	*Accuracy*	*Before*	*After*	*Lot #*
Conductivy 1000 µs/cm	*(+/-.5%)*	1028	1000	9GD788
pH 7 Buffer	*(+/- .2)*	6.76	7.00	9GC686
pH mV for 7 Buffer	*(0 +/- 50)*		13.8	
pH 4 Buffer	*(+/- .2)*	4.30	4.00	9GC044
pH mV for 4 Buffer	*(180 +/- 50)*		166.0	
pH 10 Buffer	*(+/- .2)*	9.96	10.00	9GC750
pH mV for 10 Buffer	*(-180 +/- 50)*		-140.0	
ORP mV, 237.5	*(+/- 20 mV)*	216.0	238.00	9G1660
DO 100% Sat	*(+/- 2%)*	102.0%	100.0%	
0% DO Check	*(+/- 2%)*		0.40	9GG533
Turbidity 0 NTU	*(+/- 5%)*			19E19170116
Turbidity 126 NTU	*(+/- 5%)*			

This document certifies that US Environmental Rental Corporation has provided this rental equipment and all accessories in good working order. It is the renter's responsibility to: a) review all included items upon receipt, b) verify that all items are in acceptable condition and function properly, and c) contact a US Environmental associate immediately if any item is missing, damaged, and/or not functioning properly. Any delay in notifying US Environmental will be considered as the Renter taking responsibility for such missing, damaged, and/or malfunctioning item.

Missing, damaged, and/or malfunctioning equipment and accessories will result in additional fees.

EQUIPMENT CALIBRATION DAILY LOG

Date: 05/13/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. J. Kamm

PID	Model: MiniRAE 3000 11.7EV Equipment ID #: 5929(4477)				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1500	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 99.9 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Piont Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-14-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Thomas

PID	Model: Mini RAE 3000 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592914441						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1530	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JT 0.0 ppm	Value: JT. 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4009/109	Initials: JT. 99.9 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/14/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: DP

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Portable Turb Meter Equipment ID #: 15D101641, 115562-4M / 17061389				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0900	Time:	Time:
First Point Calibration (Auto)	pH	7.00	7/2022	06B276	Initials: DP	Value: 6.90	
	Turbidity (NTU)	<0.10	5/21	LT 239D		Value: 0.02	
	Conductivity (mS/cm)	1.000	4/20	7G0788		Value: 984	
	ORP	238	8/20	96K349		Value: 235	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 94.32	
Second Point Calibration	pH	4.00	10/21	96702	Initials: DP	Value: 3.99	
	Turbidity (NTU)	100	5/21	LT 239D		Value: 93.6	
	Conductivity (mS/cm)	Ø	NA	D.I.		Value: 17	
	pH	10.00	2/22	06B273		9.82	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/14/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: DP

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 08J100029, 600336-4M						
	Parameter	Standard	Exp. Date	Lot #	Time: 0945	Time: 1615	Time: 1635
First Point Calibration (Auto)	pH	7.00	2/22	06B276	Initials: DP	Value: 6.86	—
	Turbidity (NTU)	—	—	—		Value: —	—
	Conductivity (mS/cm)	1000	4/21	06D136		Value: 1000	—
	ORP	238	1/21	06D675		Value: 220.5	231.2
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 97.6%	—
Second Point Calibration	pH	4.00	2/22	06B875	Initials: DP	Value: 3.97	—
	Turbidity (NTU)	—	—	—		Value: —	—
	Conductivity (mS/cm)	Ø	NA	D.I.		Value: 37	—
		10.00	2/22	06B273		9.78	—

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/15/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Shamm

PID	Model: MiniRAE 3000 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0735	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 99.8 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/15	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: DP

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turb Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, 115562-4M / 17Q389						
	Parameter	Standard	Exp. Date	Lot #	Time: 1215	Time: 1635	Time:
First Point Calibration (Auto)	pH	7.00	~~2/22~~	0GB276	Initials: DP	Value: 6.87	
	Turbidity (NTU)	<0.10	5/21	LT239D		Value: 0.22	
	Conductivity (mS/cm)	1000	4/21	0GD138		Value: 987	
	ORP	238	1/21	0GD675		Value: 232	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Plont Calibration	pH	4.00	2/22	0GB875	Initials: DP	Value: 3.87	
	Turbidity (NTU)	100	5/21	LT239D		Value: 106	
	Conductivity (mS/cm)	Ø	NA	D.I		Value: —	
	pH	10.00	2/22	0GB273		10.15	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-18-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shannon

PID	Model: MiniRAE 3000 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0735	Time: 1615	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS. 0.0 ppm	Value: JS 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4003103	Initials: 99.9 ppm	Value: JS. 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:
turbidity not calibrated @ 1300

80 - 80.1
100 - 100
20 - 20.3
<0.10 0.07

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-19-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Shannon

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-964437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0725	Time: 1850	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JL 0.0 ppm	Value: BT 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 98.9 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/19/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: TNK

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS 15D101641/115562				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: GEOTECH TURB 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1530	Time:
First Point Calibration (Auto)	pH	4	10/21	9G5702	Initials: TW	Value: 4.07	
	Turbidity (NTU)	< 0.10	6/21	239D		Value: 0.02	
	Conductivity (mS/cm)	1	4/2020	76D788		Value: 1006 µS/cm	
	ORP	238	8/20	96K349		Value: 220.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 92.6%	
Second Point Calibration	pH	7	2/22	0G3276	Initials: TW	Value: 6.89	
	Turbidity (NTU)	800	6/21	209D		Value: 777	
	Conductivity (mS/cm)	–	–	–		Value: –	
	pH	10	2/22	0G3273		10.04	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/19/20 for 5/20/20 use	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: [illegible]

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS ISD 101641/115562 / Equipment ID #: GEOTECH TURB 17061389				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0751	Time: 1430	Time:
First Point Calibration (Auto)	pH	4	10/21	9G5702	Initials: [illegible]	Value: 4.01	
	Turbidity (NTU)	20	9/20	2319		Value: 19.5	
	Conductivity (mS/cm)	1	4/20	7GD788		Value: 972	
	ORP	238	8/20	9GK349		Value: 229	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7	2/22	0GB276	Initials: [illegible]	Value: 7.02	
	Turbidity (NTU)	100	5/21	2399		Value: 106	
	Conductivity (mS/cm)	—	—	—		Value: —	
	PH	10	2/22	0GB273		10.01	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-20-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: MiniRAE 3000 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0745	Time: 1620	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS. 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4003-183	Initials: 99.9 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-21-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Sharma

PID	Model: MiniRAE 3000 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0745	Time: 1350	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS. 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003 183	Initials: 100.0 ppm	Value: 99.9 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 5/21/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: [illegible]

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS 15D101641/115562				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: GEOTECH TURB 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1330	Time:
First Point Calibration (Auto)	pH	4	10/21	965702	Initials: [illegible]	Value: 3.83	
	Turbidity (NTU)	20	9/20	231D		Value: 18.4	
	Conductivity (mS/cm)	1	4/20	760788		Value: 999	
	ORP	238	8/20	964349		Value: 222.1	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 96.4	
Second Point Calibration	pH	7	2/22	068276	Initials: [illegible]	Value: 6.82	
	Turbidity (NTU)	800	5/21	239D		Value: 750	
	Conductivity (mS/cm)	–	–	–		Value: –	
	pH	10	2/22	068273		10.04	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-22-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shamen

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914497						
	Parameter	Standard	Exp. Date	Lot #	Time: 0810	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4509183	Initials:	Value: 100. ppm	

WATER QUALITY METER	Model: YSI 556 MPS / 17061389				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641 - 115562						
	Parameter	Standard	Exp. Date	Lot #	Time: 0855	Time: 1700	Time:
First Point Calibration (Auto)	pH	4	6/21	96J702	Initials:	Value: 4.02	
	Turbidity (NTU)	20.10	6/21	2390		Value: 0.25	
	Conductivity (mS/cm)	1000	4/21	760788		Value: 979	
	ORP	238	8/20	46K349		Value: 236	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	7	2/22	060236	Initials:	Value: —	
	Turbidity (NTU)	20	9/20	2310		Value: —	
	Conductivity (mS/cm)	—	—	—		Value: —	—

Additional Remarks:

	10	2/22	060273
Turbidity	100	6/21	2390
	800	5/21	2390

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-26-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: V. Shamer

PID	Model: MinRAE 3000 11.7EV Equipment ID #: 592-914937				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0750	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: [illegible] 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 98.9 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Piont Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 08.05-27-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shannon

PID	Model: MiniRAE 3000 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914497						
	Parameter	Standard	Exp. Date	Lot #	Time: 0745	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: JS 100.0 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:
Dosimeter Calibration
Unit # 50065
Model # SV 104 IS
Calibration unit 2130-1006 * 33120 * IEC 60942:2003 114dB class 2
Factor. 0.52 dB
NEW 0.59 dB accepted

EQUIPMENT CALIBRATION DAILY LOG

Date: 05-28-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shanan

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0530	Time: 1540	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: [illegible] 0.0 ppm	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 99.7 ppm	Value: 100.0	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: ~~05-28-20~~ 05-29-2020 JL	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shannon

PID	Model: Mini RAE 3000 11.7EV Equipment ID #: 592-914437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JL 0.0ppm	Value: 0.0ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene (Calibration Gas)	2/29	4003183	Initials: JL 99.9ppm	Value: 100.0ppm	

WATER QUALITY METER	Model: Equipment ID #:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Piont Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

Perimeter Calibration
Unit 50065
Model SV 104 IS
Calibration 2130-1006 IEC 60942:2003 114dB class 2
33121
Factor: 0.52 dB NE 0.58 dB accepted.

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-01-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shaner

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: JS 98.4	Value: 99.3	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH	7			Initials:	Value:	
	Turbidity (NTU)	0.02				Value:	
	Conductivity (mS/cm)	1000				Value:	
	ORP	238				Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH	4			Initials:	Value:	
	Turbidity (NTU)	20				Value:	
	Conductivity (mS/cm)	-				Value:	

Additional Remarks:

pH	10
Turbidity (NTU)	100
Turbidity (NTU)	800

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-02-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0700	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JD	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: 99.6	Value: 98.1	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH	7			Initials:	Value:	
	Turbidity (NTU)	0.02				Value:	
	Conductivity (mS/cm)	1000				Value:	
	ORP	238				Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH	4			Initials:	Value:	
	Turbidity (NTU)	20				Value:	
	Conductivity (mS/cm)	-				Value:	

Additional Remarks:

pH	10
Turbidity (NTU)	100
Turbidity (NTU)	800

EQUIPMENT CALIBRATION DAILY LOG

Date: 06 03 -20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Sharron

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JJ 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: JJ 98.1	Value: 98.5	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH	7			Initials:	Value:	
	Turbidity (NTU)	0.02				Value:	
	Conductivity (mS/cm)	1000				Value:	
	ORP	238				Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH	4			Initials:	Value:	
	Turbidity (NTU)	20				Value:	
	Conductivity (mS/cm)	-				Value:	

Additional Remarks:

pH	10
Turbidity (NTU)	100
Turbidity (NTU)	800

EQUIPMENT CALIBRATION DAILY LOG

Date: 06 04-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shamsu

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: JS 100.0	Value: 99.9	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH	7			Initials:	Value:	
	Turbidity (NTU)	0.02				Value:	
	Conductivity (mS/cm)	1000				Value:	
	ORP	238				Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH	4			Initials:	Value:	
	Turbidity (NTU)	20				Value:	
	Conductivity (mS/cm)	-				Value:	

Additional Remarks:

pH	10
Turbidity (NTU)	100
Turbidity (NTU)	800

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-05-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: Mini RAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/2023	4003183	Initials: 99.2 ppm	Value: 99.3 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-08-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: 592-914 437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: MiniRAE 3000 10.7 EV						
	Parameter	Standard	Exp. Date	Lot #	Time: 0735	Time: 1330	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: JS 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/23	F003183	Initials: JS 100.0 ppm	Value: JS 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 06/09/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shaman

PID	Model: MiniRAE 3000				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-91443						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS. 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4003163	Initials: 98.9 ppm	Value: 100.2 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/9/2025	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: DP

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556MPS / Geotech Turb				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, 115562-4M / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0850	Time: 1610	Time:
First Point Calibration (Auto)	pH	7.00	2/22	068276	Initials: DP	Value: 6.97	
	Turbidity (NTU)	<.10	05/21	LT2390		Value: 0.02	
	Conductivity (mS/cm)	0	NA	D.I.		Value: 8	
	ORP	238	1/21	060675		Value: 223.5	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 64.6	
Second Point Calibration	pH	4.00	2/22	068875	Initials: DP	Value: 4.00	
	Turbidity (NTU)	800	05/21	LT2390		Value: 778	
	Conductivity (mS/cm)	1000	4/21	060136		Value: 982	
	pH	10.00	2/22	068273		9.95	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-10-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Shaffer

PID	Model: Mini RAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0740	Time: 1300	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: [illegible] 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4003189	Initials: [illegible] 99.5 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/10/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: AS

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Turb				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, 115562-4M / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0740	Time: 1530	Time:
First Point Calibration (Auto)	pH	7.00	2/22	06B276	Initials: AS	Value: 6.85	
	Turbidity (NTU)	2.10	05/21	LT239D		Value: 0.94	
	Conductivity (mS/cm)	0	NA	D.I.		Value: 4	
	ORP	238	1/21	06D675		Value: 224.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 85.5	
Second Point Calibration	pH	4.00	2/22	06B875	Initials: AS	Value: 3.99	
	Turbidity (NTU)	800	05/21	LT239D		Value 773	
	Conductivity (mS/cm)	1000	4/21	06D136		Value: 1001	
	PH	10.00	2/22	06B273		9.91	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/11/2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Sherman

PID	Model: Mini RAE 3000 10.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0250	Time: 1350	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: JS 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4000/183	Initials: JS 99.5 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/11/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: Dylan Potter

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Portable Turb				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, 1155662-4M / 17061384						
	Parameter	Standard	Exp. Date	Lot #	Time: 0940	Time: 1555	Time:
First Point Calibration (Auto)	pH	7.00	2/22	06B276	Initials: DP	Value: 6.99	
	Turbidity (NTU)	0.02	5/21	LT239D		Value: 0.02	
	Conductivity (mS/cm)	0	NA	D.I.		Value: 28	
	ORP	238	1/21	06D675		Value: 233.2	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 103.1	
Second Point Calibration	pH	4.00	2/22	06B275	Initials: DP	Value: 4.03	
	Turbidity (NTU)	800	5/21	LT239D		Value: 792	
	Conductivity (mS/cm)	1000	~~06D136~~ 4/21	06D136		Value: 983	
		10.00	2/22	06B273		9.95	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-12-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Johnson

PID	Model: Mini RAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0750	Time: 1400	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: [illegible] 0.0 ppm	Value: [illegible] 0.2 ppm	
Second Point Calibration	Vapor conc. (ppm)	isobutylene 100 (Calibration Gas)	2/2023	4009183	Initials: 99.5 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model:				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration (Auto)	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	
	ORP					Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH				Initials:	Value:	
	Turbidity (NTU)					Value:	
	Conductivity (mS/cm)					Value:	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/12/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: Dylan Potter

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Portable				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, 115662-4 / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0745	Time: 1500	Time:
First Point Calibration (Auto)	pH	7.00	12/22	06B276	Initials: DP	Value: 6.97	
	Turbidity (NTU)	0.02	5/21	LT239D		Value: 0.23	
	Conductivity (mS/cm)	0	NA	DI		Value: 6	
	ORP	238	6/21	06D675		Value: 228.5	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 98.7	
Second Point Calibration	pH	4.00	2/22	06B875	Initials: DP	Value: 3.86	
	Turbidity (NTU)	800	5/21	LT239D		Value: 805	
	Conductivity (mS/cm)	1000	4/21	06D146		Value: 1005	
		10.00	2/22	06B273		9.78	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 6-15-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Thomas

PID	Model: MiniRAE 3000 - 11.7EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0745	Time: 1610	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0 ppm	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene (Calibration Gas)	2/2023	4003183	Initials: 99.0 ppm	Value: 100.0	

WATER QUALITY METER	Model: YSI 556 MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15010641						
	Parameter	Standard	Exp. Date	Lot #	Time: 0700	Time: 1600	Time:
First Point Calibration (Auto)	pH	7.00	2/22	060276	Initials:	Value: 6.97	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	100	4/21	060146		Value: 1005	
	ORP	238	1/21	060875		Value: 228.5	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 9.07	
Second Point Calibration	pH	4.00	2/22	060875	Initials:	Value: 3.88	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	~~1000~~	—	—		Value: —	
	pH	10.00	2/22	060273		9.78	

Additional Remarks:

Turbidity meter: Geotech turbidity Meter 17061389 /
check: 20 - 19.8
100 - 100.0
800 - 807
<0.1 - 0.02

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/16/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon, D. Potter

PID	Model: MiniRAE 3000 K,1 EV Equipment ID #: 592-914437				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0735	Time: 1520	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	2nd Aylene (Calibration Gas)	2/2023	4003183	Initials: 100.0	Value: 100.0	

WATER QUALITY METER	Model: YSI 556 MPS / GeoTech Portable Turb Equipment ID #: 15D101641, 115562-4M / 17061384				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time:	Time:
First Point Calibration (Auto)	pH	7.0	2/22	0GB276	Initials: 0.02	Value: 6.91	
	Turbidity (NTU)	<0.10	6/21	2390		Value: 0.02	
	Conductivity (mS/cm)	0	NA	DI		Value: 37	
	ORP	238	1/21	0GD675		Value: 247.3	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: 9.98	
Second Point Calibration	pH	4.0	2/22	0GB875	Initials: 19.5	Value: 4.15	
	Turbidity (NTU)	20	9/20	2310		Value: ~~19.5~~ 21.1	
	Conductivity (mS/cm)	1000	4/21	0GD136		Value: 969	
		10.0	2/22	0GB273		10.02	

Additional Remarks:

Turbidity	100	6/21	2390	101
Turbidity	800	6/21	2390	804

EQUIPMENT CALIBRATION DAILY LOG

Date: 6/7/20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Sharma, D. Potter

PID	Model: Mini RAE 3000 10.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1605	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: A 0.4	Value: A 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	2/23	4003(B)	Initials: 98.7	Value: 99.5	

WATER QUALITY METER	Model: YSI 556MPS / Geotech Portable Turb				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641 / 115562-4M / 17061384						
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1035	Time:
First Point Calibration (Auto)	pH	7.0	2/22	068276	Initials: DP 0.02	Value: 6.98	
	Turbidity (NTU)	<0.10	6/21	2390		Value: <0.02	
	Conductivity (mS/cm)	0	NA	DI		Value: —	
	ORP	238	1/21	060675		Value: 232	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4.0	2/22	068875	Initials: 19.6	Value: 4.01	
	Turbidity (NTU)	20	9/20	2310		Value: 20.5	
	Conductivity (mS/cm)	1000	4/21	060136		Value: 1002	
		10.0	2/22	068273		10.05	

Additional Remarks:

Turbidity	100	6/21	2390	101
	800	6/21	2390	803

EQUIPMENT CALIBRATION DAILY LOG

Date: 6-18-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shaner

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1500	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: 99.6	Value: 100.0	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0750	Time: 1630	Time:
First Point Calibration (Auto)	pH	7	2/22	06B276	Initials:	Value: 7.0	
	Turbidity (NTU)	0.02	6/21	239D		Value: 0.02	
	Conductivity (mS/cm)	1000	4/21	06D136		Value: 1050	
	ORP	238	8/20	96K349		Value: 238	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Point Calibration	pH	4	10/21	96J702	Initials:	Value: 4.1	
	Turbidity (NTU)	20	9/20	231D		Value: 19.1	
	Conductivity (mS/cm)	-	—	—		Value: —	—

Additional Remarks:

pH	10	2/22	06B273	10.5
Turbidity (NTU)	100	6/21	239D	99.7
Turbidity (NTU)	800	6/21	231D	807

EQUIPMENT CALIBRATION DAILY LOG

Date: 6-19-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shahan

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: 97.9	Value: 98.5	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1615	Time:
First Point Calibration (Auto)	pH	7	2/22	0GB276	Initials:	Value: 7.1	
	Turbidity (NTU)	0.02	6/21	239D		Value: 0.11	
	Conductivity (mS/cm)	1000	4/21	0GD136		Value: 1003	
	ORP	238	8/20	9GK349		Value: 244	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Point Calibration	pH	4	10/21	9GJ702	Initials:	Value: 3.9	
	Turbidity (NTU)	20	9/20	231D		Value: 19.9	
	Conductivity (mS/cm)	-	—	—		Value: —	—

Additional Remarks:

pH	10	2/22	0GB273	9.7
Turbidity (NTU)	100	6/21	239D	99.2
Turbidity (NTU)	800	6/21	239D	803

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-22-20	Project Name: NIKE PR-79 RUFS
Project Number: 60608703	Recorded By: P. Shannon

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0745	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JP 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: JP 98.7 ppm	Value: 100.0 ppm	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, ~~1155602-VM~~ / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1605	Time:
First Point Calibration (Auto)	pH	7	2/22	06B276	Initials: JP	Value: 7.05	
	Turbidity (NTU)	0.02	6/21	239 D		Value: 0.4	
	Conductivity (mS/cm)	1000	4/21	06D136		Value: 843	
	ORP	238	8/20	9GK349		Value: 236	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	9GF702	Initials: JP	Value: 6.76	
	Turbidity (NTU)	20	9/20	231 D		Value: 18.0	
	Conductivity (mS/cm)	-	—	—		Value:	

Additional Remarks:

pH	10	2/22	06B273	9.40
Turbidity (NTU)	100	6/21	239D	98
Turbidity (NTU)	800	6/21	239D	804

SpCo out of range during evening check. Unit will be recalibrated prior to next use.

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-29-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Shaw

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0740	Time: 1500	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JT 0.0	Value: 0.0	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: JT 98.9	Value: 100.0	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ~~ISD101641, 1155662-YM~~ / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1600	Time:
First Point Calibration (Auto)	pH	7	2/22	068276	Initials: JT	Value: 6.98	
	Turbidity (NTU)	0.02	6/21	2390		Value: 0.04	
	Conductivity (mS/cm)	1000	4/21	060176		Value: 1020	
	ORP	238	8/20	96K349		Value: 228.1	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	96V702	Initials: JT	Value: 4.15	
	Turbidity (NTU)	20	9/20	2310		Value: 18.4	
	Conductivity (mS/cm)	-	—	—		Value: —	—

Additional Remarks:

pH	10	2/22	068279	9.90
Turbidity (NTU)	100	6/21	2390	100.4
Turbidity (NTU)	800	6/21	2390	800

EQUIPMENT CALIBRATION DAILY LOG

Date: 08-24-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0740	Time: 1600	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: JS 0.0 ppm	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: JS 99.8 ppm	Value: 98.9 ppm	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101641, ~~1155662-YM~~ / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1600	Time:
First Point Calibration (Auto)	pH	7	2/22	06B276	Initials: JS. 0.02	Value: 7.05	
	Turbidity (NTU)	0.02	6/21	239D		Value: 0.06	
	Conductivity (mS/cm)	1000	4/2021	06D136		Value: 959	
	ORP	238	8/20	96K349		Value: 242	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Point Calibration	pH	4	10/21	96J702	Initials: JS. 19.5	Value: 3.9	
	Turbidity (NTU)	20	9/20	231D		Value: 18.9	
	Conductivity (mS/cm)	-	—	—		Value: —	—

Additional Remarks:

pH	10	2/22	06B273		9.8
Turbidity (NTU)	100	6/21	239D	100	104
Turbidity (NTU)	800	6/21	239D	802	801

EQUIPMENT CALIBRATION DAILY LOG

Date: 06-25-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Shaman

PID	Model: MiniRAE 3000 11.7 EV				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #: 592-914437						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1500	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials: 0.0.	Value: 0.0 ppm	
Second Point Calibration	Vapor conc. (ppm)	Isobutylene 100 (Calibration Gas)	02/2023	4003183	Initials: 99.7	Value: 100.1 ppm	

WATER QUALITY METER	Model: YSI 556 MPS / Geotech Portable Turbidity Meter				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: ISD101641, 1155662-YM / 17061389						
	Parameter	Standard	Exp. Date	Lot #	Time: 0830	Time: 1615	Time:
First Point Calibration (Auto)	pH	7	2/22	0GB276	Initials:	Value: 7.01	
	Turbidity (NTU)	0.02	6/21	23CD		Value: 0.4	
	Conductivity (mS/cm)	1000	4/21	0G0136		Value: 1010	
	ORP	238	8/20	9G[illegible]9		Value: 242	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Point Calibration	pH	4	10/21	9G702	Initials:	Value: 4.05	
	Turbidity (NTU)	20	4/20	231D		Value: 20.5	
	Conductivity (mS/cm)	-	—	—		Value: —	—

Additional Remarks:

pH	10	2/22	0GB273	9.98
Turbidity (NTU)	100	6/21	23CD	107
Turbidity (NTU)	800	6/21	239D	720

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1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200

Order No.: R-53710
Date: 11/13/2020
Technician: BP

Company: AECOM
Contact: ANDREW
Phone #: #N/A

Packing List

Item	Serial Number	Included	QC
Ion Science Tiger	1000-1027	✓	
Manual		✓	
Charger		✓	
Probe Tip		✓	
Alkaline Battery Pack		✓	
External Filters			
Software			
Comm. Cable			
Regulator		✓	
Tedlar Bag		✓	
Calibration Gas		✓	
Tube Holder			
Zero Tubes			

Calibration Report

Item		Information	
Ion Science Tiger	1000-1027		
Calibration Gas:		*100 PPM ISO*	
Lot Number:		4013568	
Span Setting:		*100.00*	*ppm*
Correction Factor:		*1.00*	
Zero Reading:		*0.00*	*ppm*
Span Reading:		*100.00*	*ppm*
Post-Cal Bump Test:		*100.90*	*ppm*
Lamp		*10.6 eV*	

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1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200

Order No.: R-53710
Date: 11/13/2020
Technician: BP

Company: AECOM
Contact: ANDREW
Phone #: #N/A

Packing List

Item	Serial Number	Included	QC
Ion Science Tiger	1000-1076	✓	
Manual		✓	
Charger		✓	
Probe Tip		✓	
Alkaline Battery Pack		✓	
External Filters			
Software			
Comm. Cable			
Regulator			
Tedlar Bag			
Calibration Gas			
Tube Holder			
Zero Tubes			

Calibration Report

Item		Information	
Ion Science Tiger	1000-1076		
Calibration Gas:		*100 PPM ISO*	
Lot Number:		4013568	
Span Setting:		*100.00*	*ppm*
Correction Factor:		*1.00*	
Zero Reading:		*0.00*	*ppm*
Span Reading:		*100.00*	*ppm*
Post-Cal Bump Test:		*100.70*	*ppm*
Lamp		*10.6 eV*	

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1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200

Order No.: R-53710
Date: 11/13/2020
Technician: BP

Company: AECOM
Contact: ANDREW
Phone #: #N/A

Packing List

Item	Serial Number	Included	QC
Ion Science Tiger	1000-1489	✓	
Manual		✓	
Charger		✓	
Probe Tip		✓	
Alkaline Battery Pack		✓	
External Filters			
Software			
Comm. Cable			
Regulator		✓	
Tedlar Bag		✓	
Calibration Gas		✓	
Tube Holder			
Zero Tubes			

Calibration Report

Item		Information	
Ion Science Tiger	1000-1489		
Calibration Gas:		*100 PPM ISO*	
Lot Number:		4013568	
Span Setting:		*100.00*	*ppm*
Correction Factor:		*1.00*	
Zero Reading:		*0.00*	*ppm*
Span Reading:		*100.00*	*ppm*
Post-Cal Bump Test:		*100.20*	*ppm*
Lamp		*10.6 eV*	

Need help with the calibrating your PID?
We have "How To" Videos on our website. Use your smart phone's QR Code reader to find our videos at:
usenvironmental.com/technical-support/videos/

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US Environmental Rental Corporation

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5C South Gold Dr, Hamilton, NJ 08691 (609) 570-8555
1202 Tech Blvd., Suite 108, Tampa, FL 33619 (813) 628-4200
781 Industrial Dr, Elmhurst, IL 60126 (630) 501-1847

Order No.: R53710
Date: 11/13/2020
Technician: MA

YSI

Company: AECOM
Contact: ANDREW
Phone #: #N/A

Packing List

Item	Serial Number	Tech	QC
556	0	✓	
Handheld Display	15D101642	✓	

Item	Tech	QC	Item	Tech	QC
Cable 12 '	✓		AC Adaptor		
Flow Cell	✓		Stand		
Barb Kit	✓		D.O Kit	✓	
Storage / Cal Cup	✓		Calibration Kit	✓	
Sensor Guard	✓				
Manual	✓				
Sonde Cap					
Software					
Extra Batteries	✓				
Display Comm. Cable	✓				
Sonde Comm. Cable					

Calibration Report

556			0	
Parameter	*Accuracy*	*Before*	*After*	*Lot #*
Conductivy 1000 µs/cm	*(+/-.5%)*	1009	1000	9GJ567
pH 7 Buffer	*(+/- .2)*	7.21	7.00	9GC285
pH mV for 7 Buffer	*(0 +/- 50)*		-12.3	
pH 4 Buffer	*(+/- .2)*	4.25	4.00	9GK205
pH mV for 4 Buffer	*(180 +/- 50)*		146.9	
pH 10 Buffer	*(+/- .2)*	10.22	10.03	9GC750
pH mV for 10 Buffer	*(-180 +/- 50)*		-185.0	
ORP mV, 237.5	*(+/- 20 mV)*	237.0	238.00	9GC1660
DO 100% Sat	*(+/- 2%)*	102.3%	101.1%	
0% DO Check	*(+/- 2%)*		2.00	
Turbidity 0 NTU	*(+/- 5%)*			
Turbidity 126 NTU	*(+/- 5%)*			

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YSI

Order No.: R53710
Date: 11/13/2020
Technician: MA

Company: AECOM
Contact: ANDREW
Phone #: #N/A

Packing List

Item	Serial Number	Tech	QC
556	0	✓	
Handheld Display	03L0628AE	✓	

Item	Tech	QC	Item	Tech	QC
Cable 12 '	✓		AC Adaptor		
Flow Cell	✓		Stand		
Barb Kit	✓		D.O Kit	✓	
Storage / Cal Cup	✓		Calibration Kit	✓	
Sensor Guard	✓				
Manual	✓				
Sonde Cap					
Software					
Extra Batteries	✓				
Display Comm. Cable	✓				
Sonde Comm. Cable					

Calibration Report

556			0	
Parameter	*Accuracy*	*Before*	*After*	*Lot #*
Conductivy 1000 µs/cm	*(+/-.5%)*	1040	1000	9GJ567
pH 7 Buffer	*(+/- .2)*	7.08	7.00	9GC285
pH mV for 7 Buffer	*(0 +/- 50)*		-4.9	
pH 4 Buffer	*(+/- .2)*	4.11	4.00	9GK205
pH mV for 4 Buffer	*(180 +/- 50)*		162.8	
pH 10 Buffer	*(+/- 2)*	10.02	10.00	9GC750
pH mV for 10 Buffer	*(-180 +/- 50)*		-173.8	
ORP mV, 237.5	*(+/- 20 mV)*	245.0	237.00	9GC1660
DO 100% Sat	*(+/- 2%)*	95.0%	100.2%	
0% DO Check	*(+/- 2%)*		2.00	
Turbidity 0 NTU	*(+/- 5%)*			
Turbidity 126 NTU	*(+/- 5%)*			

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Order No.: R53710
Date: 11/13/2020
Technician: MA

YSI

Company: AECOM
Contact: ANDREW
Phone #: #N/A

Packing List

Item	Serial Number	Tech	QC
556	0	✓	
Handheld Display	09D100420	✓	

Item	Tech	QC	Item	Tech	QC
Cable 12 '	✓		*AC Adaptor*		
Flow Cell	✓		*Stand*		
Barb Kit	✓		*D.O Kit*	✓	
Storage / Cal Cup	✓		*Calibration Kit*	✓	
Sensor Guard	✓				
Manual	✓				
Sonde Cap					
Software					
Extra Batteries	✓				
Display Comm. Cable	✓				
Sonde Comm. Cable					

Calibration Report

556			0	
Parameter	*Accuracy*	*Before*	*After*	*Lot #*
Conductivy 1000 µs/cm	*(+/-.5%)*	994	1000	9GJ567
pH 7 Buffer	*(+/- .2)*	7.20	7.00	9GC285
pH mV for 7 Buffer	*(0 +/- 50)*		1.8	
pH 4 Buffer	*(+/- .2)*	4.06	4.00	9GK205
pH mV for 4 Buffer	*(180 +/- 50)*		164.0	
pH 10 Buffer	*(+/- .2)*	10.10	10.02	9GC750
pH mV for 10 Buffer	*(-180 +/- 50)*		-166.1	
ORP mV, 237.5	*(+/- 20 mV)*	227.0	237.00	9GC1660
DO 100% Sat	*(+/- 2%)*	93.7%	99.8%	
0% DO Check	*(+/- 2%)*		2.00	
Turbidity 0 NTU	*(+/- 5%)*			
Turbidity 126 NTU	*(+/- 5%)*			

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PID Calibration Log

AECOM

Site Name:	PR-79	Manufacturer:	Tiger Ion LT
Job Number:	60608703	Model Number:	T-116471
Field Activity:	GW Sampling	Serial Number:	T-116471 1076
Fieldwork Dates:	11.16.2020	Lamp (eV):	10 eV

Instrument Number: T-116471

Calibration Gas:	Isobutylene	Zero Gas:	Ambient Air
Manufacturer:	US Enviro.	Manufacturer:	—
Lot Number:	#4013570	Lot Number:	—

Date	Time	Initials	Calibration or Check	Zero Reading (ppmv)	Calibration (Span) Gas		Comments
					Conc. (ppmv)	Reading (ppmv)	
11.16.20	1015	LZ	cal.	0.5	100.0	100.1	morning cal.
11.16.2020	1600	LZ	check	6.2	100.0	97.4	check
11.17.2020	0800	LZ	cal	0.1	100.0	99.0	morning cal
11.17.2020	1345	LZ	check	0.1	100.0	101.5	check

Acceptance Criteria: ± 0.50 ppmv ± 10%

- Record information for one instrument per sheet
- One sheet can be used on multiple days on the same site
- Use pen only; cross out errors with a single line, date and initial

RAC 2 SOP-011
Calibration Sheet Rev. 00
April 15, 2010

PID Calibration Log

AECOM

Site Name:	PR-79	Manufacturer:	Tiger Fon
Job Number:	60608703	Model Number:	—
Field Activity:	GW Sampling	Serial Number:	T-109620/1027
Fieldwork Dates:	11-16-2020	Lamp (eV):	10 eV

Instrument Number: T-109620

Calibration Gas:	Isobutylene	Zero Gas:	Ambient Air
Manufacturer:	US Enviro	Manufacturer:	—
Lot Number:	#4013570	Lot Number:	—

Date	Time	Initials	Calibration or Check	Zero Reading (ppmv)	Calibration (Span) Gas		Comments
					Conc. (ppmv)	Reading (ppmv)	
11.16.20	1030	LZ	cal.	0.4	100.0	99.7	morning cal.
11.16.2020	1600	LZ	check	0.0	100.0	90.4	check
11.17.2020	0800	LZ	cal	0.2	100.0	98.9	Morning cal
11.17.2020	1345	LZ	check	~~0~~ 0.1	100.0	92.8	check

Acceptance Criteria: ± 0.50 ppmv ± 10%

- Record information for one instrument per sheet
- One sheet can be used on multiple days on the same site
- Use pen only; cross out errors with a single line, date and initial

PID Calibration Log

AECOM

Site Name:	PR-79	Manufacturer:	Tiger Tan LT
Job Number:	60608763	Model Number:	—
Field Activity:	GW Sampling	Serial Number:	T-110640 / 1027
Fieldwork Dates:	11.16.2020	Lamp (eV):	10 eV

Instrument Number: T-110640

Calibration Gas:	Isobutylene	Zero Gas:	Ambient Air
Manufacturer:	LZ ~~Tiger Tan~~ US Env.	Manufacturer:	—
Lot Number:	#4013570	Lot Number:	—

Date	Time	Initials	Calibration or Check	Zero Reading (ppmv)	Calibration (Span) Gas		Comments
					Conc. (ppmv)	Reading (ppmv)	
11.16.20	10:00	LZ	cal.	0.4	100.0	104.5	morning cal.
11.16.2020	1600	LZ	check	0.0	100.0	100.2	check
11.17.2020	0800	LZ	cal	0.0	100.0	101.4	morning cal
11.17.2020	1335	LZ	check	0.0	100.0	90.2	check

Acceptance Criteria: ± 0.50 ppmv ± 10%

- Record information for one instrument per sheet
- One sheet can be used on multiple days on the same site
- Use pen only; cross out errors with a single line, date and initial

Turbidity Meter Calibration Log

AECOM

Site Name	NIKE P179	Manufacturer	Geotech
Field Activity	Groundwater Sampling	Model Number:	Port. Turb. Meter
Fieldwork Dates	11.16.2020 - 11.20.2020	Serial Number	18101888

Instrument Number: 18101888

Date	Time	Initials	Temp (°C)	Standard #1 Value (NTU)	Standard #1 Reading (NTU)	Standard #2 Value (NTU)	Standard #2 Reading (NTU)	Standard #3 Value (NTU)	Standard #3 Reading (NTU)	Check Comments	
11.16.2020	0930	CMH	9.86	0.02	0.03	20	20.2	100	102	800	797
11.16.2020	1545	LZ	16.5	<0.10	0.02	20	18.3	100	98.2	800	797
11.17.20	0745	LZ	0.50	<0.10	0.04	20	20.1	100	97.3	800	798
11.17.20	1320	LZ	9.89	<0.10	0.09	20	19.8	100	97.8	800	804

Acceptance Criteria	± 0.10 NTU	± 0.50 NTU	± 5.0 NTU

- Record information for one instrument per sheet
- One sheet can be used on multiple days on the same site
- Use pen only; cross out errors with a single line

Turbidity Meter Calibration Log

AECOM

Site Name	NIKE PR54	Manufacturer	Geotech
Field Activity	Groundwater Sampling	Model Number:	Port. Turb. Meter
Fieldwork Dates	11.16.2020 - 11.20.2020	Serial Number	19062099

Instrument Number: 19062099

Date	Time	Initials	Temp (°C)	Standard #1 Value (NTU)	Standard #1 Reading (NTU)	Standard #2 Value (NTU)	Standard #2 Reading (NTU)	Standard #3 Value (NTU)	Standard #3 Reading (NTU)	Check Comments	
11.16.2020	0900	CMH	9.36	0.02	0.02	100	101	800	800	20	20.1
11.17.2020	1030	CMH	9.40	0.02	0.02	100	101	800	802	20	20.4
		END of DAY									
11.16.2020	1600	CMH	12.36	0.02	0.04	100	106	800	803	20	20.3
11.17.2020	1320	CMH	11.13	0.02	0.02	100	100	800	793	20	20.4
Acceptance Criteria				± 0.10 NTU		± 0.50 NTU		± 5.0 NTU			

- Record information for one instrument per sheet
- One sheet can be used on multiple days on the same site
- Use pen only; cross out errors with a single line

RAC2 SOP-025
Calibration Sheet Rev. 00
April 15, 2010

Turbidity Meter Calibration Log

AECOM

Site Name	NIKE PR79	Manufacturer	Geotech
Field Activity	Groundwater Sampling	Model Number:	Port Turb Meter
Fieldwork Dates	11.16.2020 - 11.20.2020	Serial Number	19092241

Instrument Number: 19092241

L1.2390/5/21

Date	Time	Initials	Temp (°C)	Standard #1 Value (NTU)	Standard #1 Reading (NTU)	Standard #2 Value (NTU)	Standard #2 Reading (NTU)	Standard #3 Value (NTU)	Standard #3 Reading (NTU)	Check Comments	
11.16.20	0900	[illegible]	9.36	0.02	0.02	20	20	100	100	800	798
11.17.20	0830	[illegible]	6.67	<0.10	0.02	20	20.0	100	100	800	801
11.17.20	1340	[illegible]	10.05	<0.10	0.02	20	19.7	100	98.8	800	798
11.18.20	0745	[illegible]	-0.1°C	<0.10	0.05	20	21.0	100	99.7	800	801
11.18.20											
Acceptance Criteria				± 0.10 NTU		± 0.50 NTU		± 5.0 NTU			

- Record information for one instrument per sheet
- One sheet can be used on multiple days on the same site
- Use pen only; cross out errors with a single line

RAC2 SOP-025
Calibration Sheet Rev. 00
April 15, 2010

EQUIPMENT CALIBRATION DAILY LOG

Date: 11-16-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / Equipment ID #: 09D100420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0915	Time: 1530	Time:
First Point Calibration (Auto)	pH	7	2/22	060276	Initials:	Value: 7.01	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	1000	4/21	060136		Value: 999	
	ORP	238	8/20	96K349		Value: 241.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	96J702	Initials:	Value: 3.99	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	2/22 060223		9.88	

Additional Remarks:

turbidity meter & PID calibrated separately

EQUIPMENT CALIBRATION DAILY LOG

Date: 11-16-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shaman

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556MPS / Equipment ID #: 03206288AE				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0900	Time: 1500	Time:
First Point Calibration (Auto)	pH	7	2/22	060276	Initials:	Value: 6.80	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	100	4/21	060136		Value: 979	
	ORP	238	8/20	96K349		Value: 242.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	96J72x	Initials:	Value: 4.01	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	060273		10.07	

Additional Remarks: PID & turbidity meters calibrated separately.

EQUIPMENT CALIBRATION DAILY LOG

Date: 11-16-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Thamon

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: ~~00~~ 15010642				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: YSI556 MPS						
	Parameter	Standard	Exp. Date	Lot #	Time: 0945	Time: 1600	Time:
First Point Calibration (Auto)	pH	7	2/22	060276	Initials:	Value: 7.08	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	1000	4/21	060136		Value: 1001	
	ORP	238	8/20	96R349		Value: 242.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	96T702	Initials:	Value: 4.06	
	Turbidity (NTU)	—	—	—		Value: —	
	Conductivity (mS/cm)	—	—	—		Value: —	
	10	2/22	060273			10.19	

Additional Remarks: PID & turbidity meters calibrated on separate forms

EQUIPMENT CALIBRATION DAILY LOG

Date: ~~11-16-2021~~ 11-17-2020 JC	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: 09010420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 451556MPS						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1430	Time:
First Point Calibration (Auto)	pH	7	2/22	061276	Initials:	Value: 7.15	
	Turbidity (NTU)	—	—	—		Value: —	—
	Conductivity (mS/cm)	1000	4/21	061136		Value: 998	
	ORP	238	8/20	961349		Value: 245.3	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Point Calibration	pH	4	10/21	965202	Initials:	Value: 4.20	
	Turbidity (NTU)	—	—	—		Value: —	—
	Conductivity (mS/cm)	—	—	—		Value: —	—

Additional Remarks: pH 10 2/22 10.19
PID & turbidity meter calibrated on separate forms

EQUIPMENT CALIBRATION DAILY LOG

Date: ~~11-17-2020~~ 11-17-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 15D101642						
	Parameter	Standard	Exp. Date	Lot #	Time: 0900	Time: 1330	Time:
First Point Calibration (Auto)	pH	7	2/22	060276	Initials:	Value: 7.15	
	Turbidity (NTU)	—	—	—		Value: —	—
	Conductivity (mS/cm)	1000	4/21	060196		Value: 917	
	ORP	238	8/20	96K349		Value: 241.1	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	6/21	96T702	Initials:	Value: 4.14	
	Turbidity (NTU)	—	—	—		Value: —	—
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	060273		10.15	

Additional Remarks: PID & turbidity meter calibrated on separate forms
SpCo out of range during evening check. Was not used to collect samples (wells were dry)

EQUIPMENT CALIBRATION DAILY LOG

Date: 11-23-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shannon

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: 09D100420 / YSI 55MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: Geotech Turbidimeter 19092241						
	Parameter	Standard	Exp. Date	Lot #	Time: 1230	Time: 1500	Time:
First Point Calibration (Auto)	pH	7	2/22	060276	Initials: JS	Value: 7.20	
	Turbidity (NTU)	0.02	6/21	2390		Value: 0.02	
	Conductivity (mS/cm)	1.00	4/21	060136		Value: 9.88	
	ORP	238	8/20	96K349		Value: 247.6	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	96J732	Initials: JS	Value:	
	Turbidity (NTU)	20	6/21	2390		Value: 20.5	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	060273		10.20	

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-01-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Vhamn

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / Equipment ID #: 09010420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0920	Time: 1500	Time:
First Point Calibration (Auto)	pH	7	2/22	9GC285	Initials:	Value: 6.95	
	Turbidity (NTU)	<0.1	6/21	2390		Value: 0.15	
	Conductivity (mS/cm)	1000	~~8/24~~	9GJ567		Value: 995	
	ORP	238	11/21	9GC1660		Value: 248.0	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Point Calibration	pH	4	2/22	9GK205	Initials:	Value: 4.03	
	Turbidity (NTU)	100	6/21	2390		Value: 100	
	Conductivity (mS/cm)	—	—	—		Value: —	—
	pH	10	2/22	9GC750		10.02	

Additional Remarks: Geotech turbidimeter # 19092241

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-02-2020	Project Name: NIKE PR-79 RUFS
Project Number: 60608703	Recorded By: J. Shanor

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 09D100420						
	Parameter	Standard	Exp. Date	Lot #	Time: 1000	Time: 1430	Time:
First Point Calibration (Auto)	pH	7	2/22	96C285	Initials:	Value: 6.91	
	Turbidity (NTU)	2.02	6/21	2390		Value: 0.14	
	Conductivity (mS/cm)	100	9/21	96J567		Value: ~~229.5~~	1010
	ORP	238	11/21	96C1660		Value: ~~1010~~	229.5
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	2/22	96K205	Initials:	Value: 4.20	
	Turbidity (NTU)	100	6/21	9390		Value: 105	
	Conductivity (mS/cm)	—	—			Value: —	
	pH	10	2/22	96C750		10.12	

Additional Remarks: Beatech Turbidimeter # 19092241

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-03-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Thann

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 09010420						
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1615	Time:
First Point Calibration (Auto)	pH	7	2/22	96C285	Initials:	Value: 7.15	
	Turbidity (NTU)	<0.10	6/21	2390		Value: 0.02	
	Conductivity (mS/cm)	1000	9/21	96J567		Value: 1025	
	ORP	238	4/21	96L160		Value: 239	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	2/22	96K205	Initials:	Value: 4.20	
	Turbidity (NTU)	100	6/21	2390		Value: 104	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	96C750		10.20	

Additional Remarks: Geotech turbidity meter 19062099

EQUIPMENT CALIBRATION DAILY LOG

Date: 012-04-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shanks

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / Equipment ID #: 09D10-482A 420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time:	Time:
First Point Calibration (Auto)	pH	7	2/22	96C205	Initials:	Value:	
	Turbidity (NTU)	<0.1	6/21	239A		Value:	
	Conductivity (mS/cm)	100	9/21	96J567		Value:	
	ORP	238	9/21	96C160		Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH	4	2/22	96K205	Initials:	Value:	
	Turbidity (NTU)	100	6/21	239D		Value:	
	Conductivity (mS/cm)	—	—	—		Value:	
	pH	10	2/22	96C750			

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-14-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shaman

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / Equipment ID #: 09A100420				Morning Calibration/Check 0230	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1200	Time:
First Point Calibration (Auto)	pH	7	2/22	96C285	Initials:	Value: 6.85	
	Turbidity (NTU)	<0.10	6/21	239D		Value: 0.02	
	Conductivity (mS/cm)	1000	9/21	96J567		Value: 983	
	ORP	238	4/21	96C160		Value: 246	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	2/22	96K205	Initials:	Value: 4.21	
	Turbidity (NTU)	100	6/21	239D		Value: 104	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	96C755		10.21	

Additional Remarks: Geotech Turbidity Meter # 19092241

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-15-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Thomas

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 09D100420						
	Parameter	Standard	Exp. Date	Lot #	Time: 0930	Time: 1745	Time: 1750
First Point Calibration (Auto)	pH	7	2/22	9GC285	Initials:	Value: 6.94	
	Turbidity (NTU)	<0.10	6/21	239A		Value: 1.50	0.02
	Conductivity (mS/cm)	1.00	9/21	9GJ567		Value: 984	
	ORP	238	6/21	9GC160		Value: 247	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	2/22	9GR205	Initials:	Value: 4.01	
	Turbidity (NTU)	100	6/21	239A		Value: 98.2	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	9GC205		10.20	

Additional Remarks:

Geotech turbidimeter # 19092241

* Turbidity re-calibrated after evening check

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-16-2020	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shamon

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 MPS / Equipment ID #: 09D100420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0730	Time: 1530	Time:
First Point Calibration (Auto)	pH	7	2/22	96K205	Initials:	Value: 7.10	
	Turbidity (NTU)	<0.10	6/21	2390		Value: 0.02	
	Conductivity (mS/cm)	1.00	9/21	96J567		Value: 1032	
	ORP	238	11/21	96L160		Value: 234.2	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	2/22	96K205	Initials:	Value: 4.05	
	Turbidity (NTU)	100	6/21	2390		Value: 107	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	96K205		10.14	

Additional Remarks:

Gotech turbidimeter #19092241

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-18-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: J. Shamn

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI MPS 556 / Equipment ID #: 19010420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0700	Time: 1545	Time:
First Point Calibration (Auto)	pH	7.0	2/22	96L285	Initials:	Value: 7.20	
	Turbidity (NTU)	<0.10	6/21	239D		Value: 0.02	
	Conductivity (mS/cm)	1000	9/21	96J567		Value: 1033	
	ORP	238.0	4/21	96L160		Value: 248	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4.0	2/22	96K205	Initials:	Value: 3.99	
	Turbidity (NTU)	100	6/21	239D		Value: 97	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10.0	2/22	96L250		10.19	

Additional Remarks: Geotech turbidity meter #19092241

EQUIPMENT CALIBRATION DAILY LOG

Date: 12-21-20	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: T. Shamar

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: YSI 556 09D100420 / Equipment ID #: 09D100420				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0700	Time: 1430	Time:
First Point Calibration (Auto)	pH	7.0	2/22	9GC285	Initials:	Value: 7.10	
	Turbidity (NTU)	<0.10	6/21	2390		Value: 0.02	
	Conductivity (mS/cm)	1000	9/21	9GJ567		Value: 998	
	ORP	238	11/21	9GC160		Value: 242.0	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4.0	2/22	9GK205	Initials:	Value: 4.01	
	Turbidity (NTU)	100	6/21	2390		Value: 99	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10.0	2/22	9GC250		10.08	

Additional Remarks: Geotech Turbidimeter # 19092241

US Environmental Rental Corporation

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YSI

Order No.: R57818
Date: 2/9/2021
Technician: MA

Company: AECOM
Contact: JOHN
Phone #: #N/A

Packing List

1BC105010

Item	Serial Number	Tech	QC
PRO DSS	3520-1093	✓	
Handheld Display	3530-1290	✓	

Item	Tech	QC	Item	Tech	QC
Cable 12 '	✓		AC Adaptor	✓	
Flow Cell	✓		Stand		
Barb Kit	✓		D.O Kit		
Storage / Cal Cup	✓		Calibration Kit	✓	
Sensor Guard	✓				
Manual	✓				
Sonde Cap					
Software					
Extra Batteries					
Display Comm. Cable	✓				
Sonde Comm. Cable					

Calibration Report

PRO DSS			3520-1093		
Parameter	*Accuracy*	*Before*	*After*	*Lot #*	
Conductivy 1000 µs/cm	*(+/-.5%)*	1016	1000	9GJ567	
pH 7 Buffer	*(+/- .2)*	7.09	7.03	9GC285	4/22
pH mV for 7 Buffer	*(0 +/- 50)*		-13.1		
pH 4 Buffer	*(+/- .2)*	4.01	4.00	9GK205	6/21
pH mV for 4 Buffer	*(180 +/- 50)*		156.1		
pH 10 Buffer	*(+/- .2)*	10.05	10.10	9GC750	
pH mV for 10 Buffer	*(-180 +/- 50)*		-176.0		
ORP mV, 237.5	*(+/- 20 mV)*	206.0	238.00	9GC1660	
DO 100% Sat	*(+/- 2%)*	92.3%	99.6%		
0% DO Check	*(+/- 2%)*		2.00		
Turbidity 0 NTU	*(+/- 5%)*				
Turbidity 126 NTU	*(+/- 5%)*				

This document certifies that US Environmental Rental Corporation has provided this rental equipment and all accessories in good working order. It is the renter's responsibility to: a) review all included items upon receipt, b) verify that all items are in acceptable condition and function properly, and c) contact a US Environmental associate immediately if any item is missing, damaged, and/or not functioning properly. Any delay in notifying US Environmental will be considered as the Renter taking responsibility for such missing, damaged, and/or malfunctioning item.

Missing, damaged, and/or malfunctioning equipment and accessories will result in additional fees.

EQUIPMENT CALIBRATION DAILY LOG

Date: 02-10-2021	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shamon

PID	Model: Pro DSS Equipment ID #: 18C105010				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: Pro DSS Equipment ID #: 18C105010				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0800	Time: 1605	Time:
First Point Calibration (Auto)	pH	7	2/22	06D276	Initials: [signature]	Value: 7.05	
	Turbidity (NTU)	<0.10	6/21	239D		Value: 0.4	
	Conductivity (mS/cm)	1000	4/21	06D136		Value: 963	
	ORP	238	8/20	9GK349		Value: 236.8	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value:	
Second Point Calibration	pH	4	10/21	9GJ702	Initials: [signature]	Value: 4.04	
	Turbidity (NTU)	20	8/21	239D		Value: 18.9	
	Conductivity (mS/cm)	—	—	—		Value: —	—
	pH	10	2/22	06B273		9.81	

Additional Remarks: Geotech turbidimeter #17111530

EQUIPMENT CALIBRATION DAILY LOG

Date: 02-11-2021	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shamon

PID	Model:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Equipment ID #:						
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: PG DSI				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Equipment ID #: 18C605010						
	Parameter	Standard	Exp. Date	Lot #	Time: 0815	Time: 1530	Time:
First Point Calibration (Auto)	pH	7	2/22	060276	Initials: [signature]	Value: 7.01	
	Turbidity (NTU)	<0.10 gr.	6/21	2390		Value: 0.22	
	Conductivity (mS/cm)	100	4/21	060136		Value: 1005	
	ORP	238	8/20	96K349		Value: 236.0	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	—
Second Piont Calibration	pH	4	10/21	965702	Initials: [signature]	Value: 4.01	
	Turbidity (NTU)	20	6/21	2390		Value: 19.2	
	Conductivity (mS/cm)	—	—	—		Value: —	—
	pH	10				9.89	

Additional Remarks: Geotech turbidiveft # 17111530

EQUIPMENT CALIBRATION DAILY LOG

Date: 02-12-2021	Project Name: NIKE PR-79 RI/FS
Project Number: 60608703	Recorded By: John Shamm

PID	Model: / Equipment ID #:				Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time:	Time:	Time:
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Initials:	Value:	
Second Point Calibration	Vapor conc. (ppm)	(Calibration Gas)			Initials:	Value:	

WATER QUALITY METER	Model: Pro DSS / Equipment ID #: 18C105010				Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
	Parameter	Standard	Exp. Date	Lot #	Time: 0845	Time: 1700	Time:
First Point Calibration (Auto)	pH	7	2/22	06B276	Initials:	Value: 6.99	
	Turbidity (NTU)	<0.10	6/21	239D		Value: 0.02	
	Conductivity (mS/cm)	1500	4/21	06D136		Value: 1009	
	ORP	238	8/20	96K349		Value: 229	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA		Value: —	
Second Point Calibration	pH	4	10/21	96J702	Initials:	Value: 4.07	
	Turbidity (NTU)	20	6/21	239D		Value: 20.2	
	Conductivity (mS/cm)	—	—	—		Value: —	
	pH	10	2/22	06B273		9.81	

Additional Remarks: Geotech turbidity meter 17111530

Appendix C

Soil Boring and Well Construction Logs

Soil Boring Logs

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: AOC-1	Hole ID: PR79-SB-101/MW-1001
Project Number: 60608703	Northing: See field report	Total Depth (feet): 32.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 05-05-2020 1220
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-05-2020 1350
Drilling Equipment: Rotasonic	∇ Water Depth During Drilling (feet bgs): —	Date / Time Completed: 05-05-2020 1435
Drilling Method: Sonic	Logged By: J. Shannan	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Sunny, 56°, wind NNW at 11-19 mph, humidity 32%	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted/Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	well graded sand with gravel, dark yellowish brown 10YR 3/4, roots and organic matter in top 6 inches		SW	47/60	S	1	0.0	1230		PR79-SB-101-AS-01 0-2 ft @ 1300 SVOCs, metals, SPLP metals, pH, TOC, Grain size
1.5	SW (75% sand, 20% gravel, 5% fines, trace clay)		SM							
	silty sand, yellowish brown 10YR 5/6 (50%) grayish brown 2.5Y 5/2 mottled, trace black dense, dry, sub-rounded cobbles to rounded (gneiss/granodiorite) SM (65% sand, 25% fines, 10% gravel) becoming yellowish red 5YR 4/6 at 4.5 to 4.75 ft becomes mostly olive gray 5Y 5/2 at 6.5 Fe staining on granodiorite cobble at 9.5 ft. sub-angular cobble			60/60	S	2	0.0	1250		PR79-SB-101-BS-01 8-10 ft @ 1300 VOCs, SVOCs, metals SPLP metals
	at 10.5 ft light gray 5Y 7/1 and well rounded cobble until 10.75 ft			100/120	S	3	0.0	1310		

5

10

15

Tracking Codes: 10/18/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1 | Site: AOC-1 | Hole ID: PR79-SB-101/MW-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										Glacial Till
20					100/120	4	0.0	1330		
25										
	Weathered bedrock, angular to sub-rounded cobbles, easily crumbled to hard, silty sand matrix, some Fe staining.						0.0			Weathered BR
30					16/24	5	0.0	1350		Bedrock
32	Bedrock, gneiss/diorite, fractured, poor recovery, fine sandy SILT w/ trace clay infilling between fractures. Near vertical fracture @ 30 ft, rough, wide.									
	End of Boring at 32', MW-001 will be installed									End of Boring MW-001 will be installed details on MW-001 MW Construction Form

Tracking Codes 10/18/12, 12:20

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: ADC-A	Hole ID: PR79-SB-102
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4-30-20 0915
Driller: Mark Schack	Elevation (feet MSL): Ground: see field report	Date / Time Finished: 4-30-20 0925
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-30-20 0930
Drilling Method: Sonic	Logged By: J. Shaman	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Rainy, 45°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted / Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	sandy SILT, very dark brown (10YR 2/2) moist, firm, low plastic, ML (85% fines, 10% sand, 5% gravel) roots throughout		ML	49/60	MB 3/A S	1	0.0	0915		PR79-SB-102-AS-01 0-2 ft 0930 SVOCs, metals, SPLP metals, pH, TOC, grain size
0.8			SM							
2.0	silty SAND, dark brown, 2.5YR 3/3 dry, loose, SM (80% sand, 15% fines, 5% gravel)		SM							
	silty SAND, grayish brown 10YR 5/2, dry, moderately dense SM (80% sand, 15 fines, 5% gravel)		ML							PR-79-SB-102-B 8-10 ft 0930 VOCs SVOCs, + SPLP metals
5			ML		MB 3/A					
	sandy SILT, very dark brown, 10YR 2/2, dry, dense, slightly plastic ML (85% fines, 15% sand, trace gravel)		ML	52/60	MB S	2	0.0	920		
7.5	sandy SILT, strong brown, 7.5YR 4/6 dry loose ML (85% fines, 15% sand trace gravel		SM							7.5 Glacial Till
10	sandy SILT, light olive brown 2.5YR 5/4, very dense, dry ML (80% SILT, 20 fines, trace gravel)									END OF BORING Backfill w/cuttings and 6" clean sand
	silty SAND with gravel, grayish brown 2.5YR 5/2, dry, dense SM (65% sand, 30% fines, 5% gravel)									
15	END OF BORING									

Tracking Codes: 10/19/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: ADC-1	Hole ID: PR79-SB-~~SB~~ 103/MW-002
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 28.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-04-20 1400
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report for data	Date / Time Finished: 05-04-20 1440
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 05-04-20 1445
Drilling Method: Rotosonic	Logged By: J. Shanahan	Checked By: AKB
Borehole Diameter (inches): 6" (0-10ft) 4" (10-	Weather/Comments: overcast 55°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.75	silty SAND, very dark brown, 7.5YR 2.5/3, loose, dry SM (65% sand, 25% fines, 10% gravel		SM	52/60	S	1	0.0	1400	1400	PR79-SB-103-AS-01 0-2 ft @ 1440 SVOCs, metals SPLP metals pH, TOC, grain size
	silty SAND with gravel, dark yellowish brown, 10YR 4/4, loose, moist SM (65% sand, 20% fines, 15% gravel		SM							PR79-SB-103-BS-01 8-10 ft @ 1440 VOCs, SVOCs, metals, SPLP metals
5 / 5.5	silty SAND, strong brown 7.5YR 5/6, mottled with very dark brown 7.5YR 2.5/3 (10/40%) mod. dense, moist SM (65% sand, 30% fines, 5% gravel		SM	49/60	S	2	0.0	1410		Glacial Till at 5.5 ft to 25.5 ft.
10	silty SAND, very dense, moist, becomes dry at 8 ft, gray 2.5Y 5/1, cobbles up to 4" observed SM (70% sand, 20% fines, 10% gravel			72/120	S	3	0.0	1430		
15										

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1

Site:

Hole ID: ARM-SB-003/MW-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										Glacial Till
20				90/96	S	4				
25							0.0			
25.5	weathered bedrock, angular to subrounded, some pieces easily crumbled by hand, silty sand matrix						3.5			
27	Bedrock granodiorite, very strong, coarse grained, massive, slightly weathered around fracture edges, slightly fractured						0.0			
28	End of Boring @ 28.0 ft MW-002 will be installed, detail on MW-002 MW Construction Form									
30										

Tracking Codes: 10/19/12, 12:20

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AECOM
Boring Log

Sheet 1 of 3

PR79-SB-104 / MW-003

Project Name: Former NIKE PR-79 Control Area	Site: ADC-1	Hole ID: ~~PR79-SB-103~~
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 35.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-01-20 0900
Driller: M. Schack	Elevation (feet MSL): Ground: see field report for data	Date / Time Finished: 05-01-20 1100
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 05-01-20 1300
Drilling Method: Sonic	Logged By: J. Shannon - AECOM	Checked By: AKB
Borehole Diameter (inches): 0-10 ft 6.0; 10-35 ft 4.0	Weather/Comments: Rainy, 50°, clearing becoming partly cloudy	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	silty SAND, very dark brown 10YR 2/2, wet, very loose. SM (70% sand, 20% fines, 10% gravel		SM	43/60	S	1	0.0	0910		PR79-SB-103-AS-01 0-2 ft 0930 SVOCs, metals, SPLP metals, pH, TOC, grain size
0.8			SM							
1.6	silty SAND, brown, 10YR 4/3, moist, very loose, SM (70% sand, 20% to fines, 10% gravel)		SP							
3.0	silty SAND, dark yellowish brown 10YR 3/4, moist, dense SM (70% sand, 20% fines, 10% gravel)		SM							PR79-SB-103-BS-01 8-10 ft 0930 VOCs, SVOCs, metals, SPLP metals
5	poorly graded SAND w/gravel, yellowish brown 10YR 5/6, dense, dry, SP (75% sand, 15% gravel, 10% fines)			60/60	S	2	0.0	0920		* water loss while drilling 10-15'
9.0	silty SAND w/gravel, mottled grayish brown 2.5Y 5/2, 60%, black 10YR 2/1 20%, dark gray 2.5YR 4/1. very dense, dry, SM 65% sand, 20% silt, 15% gravel, large cobbles, subrounded to sub angular									
10			SM	50/60	S	3	0.0	0930		Glacial Till at 10 ft
	silty SAND w/gravel: yellowish brown 10YR 4/4, moist, loose SM (60% SAND 20% fines, 20% gravel)									
	(continued)									
15										

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1 | Site: AOC-1 | Hole ID: PR79-SD-104/MW-003

Depth (feet)	USCS Description (continued from 10.0 ft)	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
15	10-25 ft silty SAND, gray, 2.5Y 6/1, hard, dry. Till SM (75% sand, 15% fines, 10% gravel) cobbles up to 4 inches, sub rounded to angular			55/60	5	4	0.0	0950		Glacial Till at 10 ft
20				59/60	5	5	0.0	1010		
25	weathered bedrock, granodiorite, sub-rounded to angular pieces up to 4" diameter, w/sand, gray, 2.5YR 6/1, slightly weathered			55/60	5	6	0.0	1020		
30				54/60	5	7	0.0	1100		
33	(continued.)									

Tracking Codes: 10/18/12, 12:20

Form: 00-BLANK LOG

AECOM

Soil Boring Log (Continued)

Project Name: MIKE-PR79	Site: ABC 1	Hole ID: PR79-SB-104/MW-003

Depth (feet)	USCS Description (continued)	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	Granodiorite bedrock, slightly weathered, slightly fractured,									
35	END OF BORING MW installed									
40										
45										
50										

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Form: 00-BLANK LOG

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC-1	Hole ID: PR79-SB-105
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4-29-30 1445
Driller: L. Tatum	Elevation (feet MSL): Ground: see field report for data	Date / Time Finished: 4.29.30 1530
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 4.29.30 1600
Drilling Method: Direct push	Logged By: J. Vlaman	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: sunny, 55°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
8" 1ft 2.0	poorly graded SAND, dark yellowish brown 10YR 4/4, dry, loose SP (80% sand, 10% fines, 5% gravel) roots		SP	42/60	DP	1	0.0	1450		PR79-SB-105-AS-01 0-2 ft 1515 SVOCs, metals, SPLP metals, pH, TOC, grain size
	SILT, black 10YR 2/1, dry, loose, low plastic, ML (85% fines, 15% sand) roots		ML							PR79-SB-105-BS-01 8-10' 1515 VOCs, SVOCs, metals, SPLP metals
5	sandy SILT with gravel, brownish yellow 10YR 6/6, mod. dense, mod. plastic, dry ML (70% fines, 25% sand, 5% gravel)		ML	25/60	DP	2	0.0	1500		@ 2-9ft Glacial Till
	silty SAND with gravel, light brownish gray, 2.5 YR 6/2, dry, dense SM (60% sand, 25% fines, 15% gravel)		SM							
9	well graded SAND with Gravel, light yellowish brown, dry, mod. dense SW (70% sand, 25% gravel, 5% fines) - decomposed gneiss - crumbles easily with moderate finger pressure		SW							weathered bedrock
10	END OF BORING Backfilled with cuttings 6" clean sand topped off									
15										

Tracking Code: 10/16/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: AOC -1	Hole ID: PR79-SB-106 /MW-004
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 15.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-05-20 1010
Driller: Mark schock	Elevation (feet MSL): Ground: See field report for data	Date / Time Finished: 05-05-20 1040
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-05-20 1140
Drilling Method: Sonic (S)	Logged By: J. Sliwinski	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Sunny, 49°, wind NNW at 12 mph, 36% humidity	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted/Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	silty SAND w/ gravel, dark brown 7.5 YR 3/4 loose, dry, roots and organic matter SM (65% sand, 20% gravel, 15% fines)		SM	32/60	S	1	1.0	1018		PR79-SB-106-AV-01 0-2 ft @ 1030 SVOCs, metals, SPLP metals, pH, TOC, grain size
	well graded GRAVEL with silt and sand, dark grayish brown 10YR 4/2 (60%) and pale brown 10YR 6/3 (40%), loose, dry, easily crumbled by hand pieces of gneiss up to 2", sub-angular GW-GM (65% Gravel, 25% sand, 10% fines)		GW GM							PR79-SB-106-BS-01 @ 1030 VOCs, SVOC, metals SPLP metals 8-10 ft
5.0	silty SAND, dark grayish brown 2.5 Y 4/2, dense, dry, cobbles rounded to sub-rounded SM (70% sand, 20% fines, 10 gravel) TRACE CLAY		SM	60/60	S	2	0.0	1025		Glacial Till 5-13 ft Weathered BR 13-14 ft Bedrock @ 14 ft
10	@ 6.5 ft becoming dark yellowish brown 10YR 4/6 @ 8.0 ft becoming grayish brown 2.5 YR 5/2 (90%) and black 2.5 YR 2.5/1 (10%) mottled angular to sub-rounded gravel and cobbles			60/60	S	3	0.0	1040		
13.0	weathered bedrock, granodiorite, very weak to very strong (continued)									
14.0	Bedrock granodiorite (continued)									
15										

Tracking Codes: 10/19/12, 1221

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1	Site: AOC-1	Hole ID: PR79-SB-106/MW-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	13-14 ft (continued) weathered bedrock, angular to sub-rounded pieces, dark olive brown to black (70/30%)									
	14-15 ft (continued) Bedrock, granodiorite, very strong, gray 50%, white 30%, black, 20%, coarse grained massive, fresh, slightly fractured RQD = 0/12 = 0% core broken into <4" pieces along horizontal planes									
20										
	strong brown infilling of fine sand and silt along fracture planes									
25	End of Borings at 15 ft. MW-004 will be installed. Detail on MW-004 MW Construction Form									
30										

Tracking Codes: 10/18/12, 12:20

Form: 00-BLANK LOG

AECOM

Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: ADC - 1	Hole ID: PR79-SB-107 / DR-001
Project Number: 60608703	Northing: See Field Report for data	Total Depth (feet): 15.0
Drilling Contractor: Glacier Drilling	Easting: See Field Report	Date / Time Started: 4-30-20 1130
Driller: Mark Schock	Elevation (feet MSL): Ground: See Field Report	Date / Time Finished: 4-30-20 1200
Drilling Equipment: Rotosonic	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-30-20 *
Drilling Method: Rotosonic	Logged By: John. Shannon	Checked By:
Borehole Diameter (inches): 6.0 in	Weather/Comments: Sunny, 52°	* will be drilled deeper later

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
4" 0 8"	silty SAND with gravel, dark yellowish brown 10YR 3/6 moist, moderately dense SW-SM (60% sand, 15% silt, 15% gravel)	SW-	SM SM	52/60	S	1	0.0	1130		PR79-SB-107-AS-01 0-2 ft 1130 SVOCs, metals, SPLP metals, pH, TOC, grain size
2.5	silty SAND, very dark brown 7.5 YR 2.5/3, moist, dense SM (70% sand, 30% fines, trace gravel)		SM							
	silty SAND, strong brown, 7.5 YR 5/8 moist, loose, SM (65% sand, 25% fines, 10% gravel) pebbles		SW-SM							PR79-SB-107-BS-01 8-10 ft 1130 VOCs, SVOCs, metals, SPLP metals
5	well graded SAND with SILT, grayish brown 2.5 YR 5/2, dry, very dense SW (80% sand, 10% fines, 10% gravel)		SM	50/60	S	2	0.0	1140		5-10 ft - Glacial Till
	silty SAND with gravel, grayish brown 2.5Y 5/2, dense, dry SM (70% sand, 15% gravel, 15% fines)									
10	pulverized bedrock, granodiorite bedrock, containing quartz, plagioclase, biotite (≈20%, 30%, 25%) coarse grained. @ 12.25 horizontal fracture, flat, weathered edges @ 12.5 horizontal fracture, weathered @ 13.75 dipping fracture 20° weathered		BR	50/60	S	3	0.0	1200		Bedrock
15										END OF BORING @ 15 ft. 6" casing installed and backfilled annulus w/grout for future BR well

Tracking Codes: 10/18/12, 12:21

USCS Name, Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: ADC-2	**Hole ID:** PR79-SB-108
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report for data	Date / Time Started: 05-06-20 1245
Driller: Mark Schack	Elevation (feet MSL): *Ground:* See field report for data	Date / Time Finished: 05-06-20 1310
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-06-20 1315
Drilling Method: Rotosonic	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Overcast, 55°, winds light and variable, humidity 40%	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.75	silty SAND, dark brown 7.5 YR 3/3 loose, slightly moist, roots and organics SM (70% sand 20% fines, 10% gravel) fine to medium sand		SM	63/60	S	1	0.0	1255		PR79-SB-108-AS-01 0-2 ft @ 1300 SVOCs, metals, pH, TOC SPLP metals Grain size
1.25	SILT w/sand, very dark brown 7.5 YR 2.5/3 med. dense slightly moist ML (75% fines, 20% fine, sand 5% med. sand, trace gravel		ML							PR79-SB-FD01-01 0-2 ft @ 1305 SVOCs, metals, pH, TOC SPLP metals Grain size
	silty SAND, mottled gray 2.5Y 5/1 70%, dark yellow brown 10YR 4/6 25%, black 10YR 2/1 5% moist, 70% fine sand, 5% med. sand, 5% fines becoming mostly gray 2.5Y 5/1 (90%) at 3ft		SM	40/60	S	2	0.0	1315		PR79-SB-108-BS-01 4-6 ft @ 1310 VOCs SVOCs, metals SPLP metals
6.0	weathered bedrock, sub-angular to sub-rounded up to cobbles, easily crumbled to very hard, w/SILT w/sand matrix		WBR							
7.0	bedrock, granodiorite, slightly fractured, slightly weathered		BR							PR79-SB-FD02-01 4-6 ft @ 1315 VOCs SVOCs metals SPLP metals
	END OF BORING Backfilled w/rock 2ft. Bentonite plug @ 6-8ft Backfilled w/cuttings 6" clean sand topped off									

Tracking Codes: 10/18/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Soil Boring Log

Sheet 1 of 1

Project Name: MILE PR79 Control Area	Site: AOC-2	Hole ID: PR79-SB-109/MW005
Project Number: 60608703	Northing: See field report	Total Depth (feet): 12.0
Drilling Contractor: Glacier	Easting: See field report	Date / Time Started: 05-06-20 1050
Driller: Mark Schack	Elevation (feet MSL): Ground: see field report	Date / Time Finished: 05-06-20 1140
Drilling Equipment: Rotosonic	▼ Water Depth During Drilling (feet bgs):	Date / Time Completed: 05-06-20 1200
Drilling Method: Roto Sonic	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0 in	Weather/Comments: overcast 55°, light and variable winds	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted/Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	silty sand, dark brown 7.5YR 3/3 loose, dry, rootrad organics SM (65% fine sand, 20% fines, 10% med. sand, 5% gravel)		SM	60/60	S	1	0.0	1100		PR79-SB-109-AS-01 0-2 ft @ 1115 SVOCs metals, pH, TOC SPLP metals Grain size
1.0			ML							
2.0	SILT w/sand, very dark brown 7.5YR 2.5/3, loose, dry ML (75% fines, 20% fine sand, 5% med sand, trace gravel		ML							
4.0	SILT w/sand, strong brown 7.5YR 5/8, mod. dense, mottled strong brown, 70%, dark grayish brown 10YR 4/2, 25%, black 10YR 2/1 5%) moist (80% fines, 20% fine sand)		SM	55/60	S	2	0.0	1110		PR79-SB-109-AS-01 8-10 ft @ 1115 SVOCs metals SPLP metals VOCs
5	silty SAND, mottled gray 2.5Y 5/1 70%, dark yellowish brown 10YR 4/6 25%, black 10YR 2/1 5%, dry, cobbles rounded to sub rounded SM (60% sand, 30% fines, 10% gravel)									
9.0			WBR							
10	weathered bedrock, angular to sub-angular pieces, easily crumbled to hard, silty sand matrix			20/24	S	3	0.0	1135		
11.0			BR							
12	Bedrock, highly fractured, slightly weathered at fractures, smooth fractures, wide.									Details for MW-005 on MW-005 Monitoring Well Construction Form
	END OF BORING AT 12 ft MW-005 installed.									
15										

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Tracking Code: C:\DOCUMENTS AND SETTINGS\APSENEIMY\DOCUMENTS\PROJECTS\MIKE POMPILIA\HOLLIJULIE.GPJ 4/5/10, 15:05

Form 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC - 2	**Hole ID:** PR79-SB-110
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report	Date / Time Started: 05-06-20 0845
Driller: Mark Schock	Elevation (feet MSL): *Ground:* see field report	Date / Time Finished: 05-06-20 0945
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 05-06-20 0950
Drilling Method: Rotosonic	Logged By: J. Slaman - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: 48°, fair, wind ENE at 7mph humidity 51%	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	80% Gravel, 15% med to coarse sand 5% fine sand									
	GRAVEL with sand, very dark grayish brown 10YR 3/2, wet, loose, cobbles rounded to sub rounded, roots and organics GW (80% G, 20% S, trace fines)		GW	47/60	S	1	0.0	0900		PR79-SB-110-AS-01 0-2 ft @ 0945 SVOCs, metals, pH, TOC SPLP metals Grain size
1.0										
1.25	silty sand, moist brown 7.5YR 4/3 SM (80% fine sand, 20% fines, trace gravel and medium coarse sand, loose		SM							
	silty sand, gray 10YR 5/1, very dense, dry, no cobbles SM (75% fine/10% med sand 15% fines, 5% gravel @ heavy metals dark gray 2.5YR 4/1 @ 4.5 ft. @ 4.5 ft. stone brown nodule of fine sand 1 in diameter		SM							
4.5										
5.0			ML							PR79-SB-110-BS-01 @ 0945 5-7 ft VOCs SVOCs, metals SPLP metals
5			WBR	50/60	S	2	0.0			
7.0	SILT w/sand, dark gray 2.5Y 4/1 ML (80% fines, 20% sand) high plastic, dry SILT is compacted around cobbles of highly weathered rock and silty sand nodules		BR							No monitoring well installed at SB-110. Weathered bedrock above depth of water based on P2-15 (historically ~ 10 ft typically dry)
10	ML (80% fines, 15% fine sand, 5% med.) weathered bedrock, angular to sub rounded, up to cobble size, easily crumbled to very hard, w/SILT w/sand matrix									
	Bedrock, highly fractured, slightly weathered, smooth edges of fractures									
	END OF Boring @ 10 ft									
15										

Tracking Codes: 10/19/12, 1221

USCS Name, Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC-2	Hole ID: PR79-SB-111 / DR-004
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 15.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-08-20 0950
Driller: Mark Schack	Elevation (feet MSL): Ground: see field report	Date / Time Finished: 05-08-20 1020
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-08-20 1135
Drilling Method: Rotosonic	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: overcast, 52°, partly sunny, dry, wind chill 32°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	SILT dark brown 10YR 3/3, roots & rootlets, spongy texture, slightly moist ML (60% fines, 10% fine sand, trace gravel		ML	56/60	S	1	0.0	0955		PR79-SB-111-AS-01 0-2 ft @1000 SVOCs, metals, pH, TOC Grain size SPLP metals
1.0			SM							
1.25	silty SAND, dark yellowish brown 10YR 4/4 fine sand, med dense slightly moist, trace root/fibers, trace gravel/cobble (SM 80% fine sand 10% fines)		ML							
	SILT, very dark grayish brown 10YR 3/2, dense, ML (45% silt, 55% fines, 5% sand, trace med to coarse sand		ML							
5.0	SILT w/ SAND, yellowish brown 10YR 5/8, med dense, moist, trace roots, trace cobbles (sub-rounded) ML (85% fines, 10% fine sand, 5% med. sand, trace gravel and clay		SM	60/60	S	2	0.0	1010		PR79-SB-7-9 ft @1010 SVOCs, metals SPLP metals
9.0	silty SAND, mottled strong brown 7.5YR 5/6 (15%) black (10%) and grayish brown 2.5Y 5/2 (75%) fine sand. SM (75% sand, 15% fines, 10% gravel) gravel is large coarse gravel and cobbles - subangular to subrounded		WBR							
10	weathered bedrock, subangular to subrounded, gravel to cobbles of granodiorite/gneiss. friable to cobbles, Fe staining apparent			50/60	S	3	0.0	1035		Completion: 6" casing installed down to 5' into bedrock @ 15.0 ft, grouted in place to surface
	Bedrock gneiss gray/black 70/30, slightly weathered, highly fractured flat to slightly dipping.									
15	END OF BORING @ 15.0 ft									

Tracking Codes: 1016/12, 1231

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC - 3	Hole ID: PR79-SB-112
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 15.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-07-20 1400
Driller: Glacier - Mark Schock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-07-20 1415
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-07-20 1420
Drilling Method: Rotosonic	Logged By: J Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments:	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	SILT w/sand, very dark brown 7.5 YR 2.5/3, spongey, roots and organics, moist ML (75% fines, 20% sand, 5% gravel fine to med. sand)		ML	40/60	S	1	0.0	1410		PR79-SB-112-AS-01 0.2 ft @ 1440 SVOCs, metals SPLP metals Grain size
	silty SAND, dark yellowish brown 10YR 4/6, mod. dense, moist, SM (85% sand, 15% silt, 0% gravel) cobbles sub-angular to sub-rounded									
4.0	Sand is, 75% (50% fine, 25% med. to coarse)									
	concrete									PR79-SB-112-BS-01 2-4 ft @ 1415 VOCs SVOCs, metals SPLP Metals
5	No recovery 5-10 ft			0/60	S	2	0.0	1415		* drilling encountered concrete septic chamber from 5-15 ft, Backfilled with plug at 4.5 ft, bentonite chips 4.5-0.5 ft 0.5 ft cement.
10	black water brought up with sample PID reading 4.3 ppm at wood pieces. bottom concrete at 14.5 ft had PID reading up 10.9 ppm			12/60	S	3	0.0	1425		PR79-SM-1 Septic Material @ 1100 5-8-20 EPH 8260 6020/7470
	wood pieces above the concrete						4.3			
	concrete						10.9			
15										

Tracking Codes: 10/19/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SI = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: AOC3	Hole ID: PR79-SB-113 / MW-006d
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 20.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 05-07-20 1040
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-07-20 1110
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-07-20 1130
Drilling Method: Rotosonic	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Sunshine, 50°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	silty SAND, dark brown 10YR 3/3 mottled with roots throughout, sparser, slightly moist SM (25% fine sand, 10% med sand, 15% fines, trace gravel		SM	5e/6	S	1	0.	1050		PR79-SB-113-AS-01 0.2 ft @ 1050 SVOCs metals, pH, TOC Grain size SPLP metals
0.75	SAND, yellowish brown, loose, moist, 10YR 5/6 SW (65% med. sand, 25% fine sand, 5% gravel, 5% fines		SW							
3.5	silty SAND, mottled gray 2.5Y 5/1 (40%), dark yellowish brown 10YR 4/6 (30%) black 10YR 2/1 (10%) very dense, moist SM (25% fine to med sand, 65% fines, 10% gravel		SM							PR79-FD03-01 0.2 ft @ 1055 SVOCs, metals, pH, TOC SPLP metals Grain size
4.25			R							
5										
5.5	cobble >6in granodiorite/gneiss, fractured slightly weathered, sub-angular to sub rounded		SM	10/12	S	2	0.0	1100		
6.0			WBR							
	silty SAND, mottled dark yellowish brown 10YR 4/6 (50%) gray 2.5Y 5/1 (40%) black 10YR 2/1 (10%), SM 50% fine sand, 30% med, dense, dry, sand, 20% fines, trace gravel			78/108 RQD = 52/108 =			0.0	1115	PR79-SB-113-AS-01 4-6 ft @ 1100 VOCs SVOCs metals SPLP metals
	weathered granodiorite, highly fractured, some Fe staining, smooth edges along fractures, sandy SILT along fractures									
10			BR		S					PR79-FD04-01 4-6 ft @ 1105 VOCs SVOCs metals SPLP metals
	Bedrock, gneiss, very strong, black and light gray foliation, gneissic texture, thinly foliated, fresh, competent, highly fractured, smooth edges, Fe staining along foliation (slight) @ 6-8 ft									
	@ 10 ft abrupt change to massive granodiorite, competent, fresh, massive, slightly fractured, smooth edges,									
	(continued)									(continued)
16										

Tracking Codes: 10/18/12, 12:21

USCS Name, Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1	Site: AOC-3	Hole ID: PR79-SB-113

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	large (1-2") fracture, shallow dipping (≈22.5°) @ 14 ft band of dark fine grained intrusive rock (magmatite?) spanning fracture at 13-15 ft		BR	57/60	S		0.0	1230		
20	END OF BORING @ 20 ft. No MW installed due to MW-0061 covering the same interval. Borehole backfilled with sand #2									
25										
30										

Tracking Codes: 10/18/12, 12:20

Form: 00-BLANK LOG

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: AOC-2	Hole ID: PR79-SB-114 / MW-007
Project Number: 60608703	Northing: See field Report for data	Total Depth (feet): 11.0
Drilling Contractor: Glacier Drilling	Easting: See field Report	Date / Time Started: 05-08-2020 0830
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report for data	Date / Time Finished: 05-08-20 0845
Drilling Equipment: Rotasonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-08-20 0915
Drilling Method: Rotasonic	Logged By: J. Sherman	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments:	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted/Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	silty SAND, dark yellowish brown, 10YR 4/6, very loose, slightly moist, roots throughout, angular to sub-rounded cobbles SM (50% med. sand, 25% fine sand, 15% fines, 10% gravel		SM	55/60	S	1	0.0	840		ARM-SB-114-BS-01 8-10 ft @ 0900 SPLP metals VOCs SVOCs metals
1.5			SM							
3	silty SAND, dark yellowish brown 10YR 4/4, dense, trace roots SM (85% sand, 10% fines, 5% gravel), slightly moist		SM							
4.5			SP							
5.0	becoming dark grayish brown 10YR 4/2, loose, slightly moist @ 1.5-3 ft									
6.0	SAND, light brownish gray 10YR 6/2 very loose, trace roots, poorly graded SAND (80% med. sand, 10% fine sand, 5% fines, trace gravel, slightly moist			63/72	S	2	2.4	0855		
9.0	silty SAND, dark brown 10YR 3/3, moderately dense, slightly moist angular to sub angular cobbles SM-60% fine sand, 20% med. sand, 15% fines, 5% gravel									
10.0	sandy SILT, very dark brown 10YR 2/2, med. dense, slightly moist ML (80% fines, 20% fine sand, trace gravel @ 6ft 1mm band black SILT									
11.0	silty SAND, mottled yellowish red 5YR 5/8 (40%) brown 10YR 5/3 (50%) black 10YR 2/2 (very dark brown) 10% dense, moist, becoming dark grayish brown 2.5Y 4/2 @ 8ft SM 60% fine sand, 20% med. sand, 15% fines, 5% gravel									(continued)
15										

End of Boring at 11 ft. description continue on page 2 of 2

Tracking Codes: 10/18/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1 | Site: | Hole ID: PR79-SB-114/MW-007

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
9.0	weathered bedrock @ 9 ft, sub angular to sub rounded cobbles to coarse gravel, silty sand matrix, rock is fresh to highly weathered									
10.0										
11.0	fractured bedrock at 10 ft, vertical fracture, granodiorite, massive, competent.									
20	END OF BORING @ 11 ft MW-007 Installed. Details on Monitoring Well Construction Form									
25										
30										

Tracking Codes: 10/18/12, 12:20

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: ADC-3	Hole ID: PR79-SB-115
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-13-2020 1035
Driller: Mark Schack	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-13 2020 1040
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-13-2020 1045
Drilling Method: Rotosonic	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Sunny, 48°, wind WNW @ 16-25 mph, humidity 29%	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	well graded sand w/gravel, dark brown 7.5YR 3/4, wet, loose, roots and leaves SW (30% medium sand, 25% fine sand, 20% coarse sand, 15% gravel, trace fines)		SW	32/60	S	1	0.0	1040		AR79-SB-115-05-01 5-6 ft @ 1100 VOCs SVOCs, metals SPLP metals
1.25			ML							
2.5	sandy SILT w/gravel, loose to med. dense, moist, large roots, angular to sub-rounded cobbles ML (55% fines, 15% fine sand, 10% med. sand 5% coarse sand, 15% gravel									
5	Bedrock cored/push through. Granodiorite slightly weathered, slightly fractured 5-60% Fe staining, pulverized rock			53/60	S	2	0.0	1055		
	well graded sand w/silt and gravel mottled olive brown 2.5Y 4/3 (80%) very dark gray (20%), med. dense to dense, moist, angular to sub-rounded cobbles SW-SM (25% med. sand, 15% coarse sand, 15% fine sand, 25% silt, 20% gravel, trace clay									
10	weathered bedrock w/i matrix of SW-SM (as above) @ 6ft									
	Rock cobble @ 7ft-10ft									
	END OF BORING @ 10ft									
15										

Tracking Code: 1019/12, 1221

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form. 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC-3	**Hole ID:** PR79-SB-116
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report for data	Date / Time Started: 05-13-2020 0815
Driller: Mark Schack	Elevation (feet MSL): *Ground:* See field report	Date / Time Finished: 05-13 2020
Drilling Equipment: Rotasonic	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-13-2020
Drilling Method: Rotasonic	Logged By: J. Shankar	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: 44°, sunny, winds W at 12-17 mph, humidity 40%	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	silty SAND, dark brown, 10YR 3/3, loose, spongy with roots and organic matter, moist SM (30% med sand, 25% fine sand, 10% coarse sand, 30% fines, 5% gravel)		SM	60/60	S	1	0.0	0905		PR79-SB-116-BS-01 5-7 ft @0930 VOCs SVOCs, metals SPLP metals
0.75			SM							
1.50										
2.5	silty sand w/ gravel, dark yellowish brown 10YR 3/4, med. dense moist angular to subrounded cobbles SM (25% med. sand, 20% fine sand, 15% coarse sand, 20% fines 20% gravel)									
5.0				55/60	S	2	0.0	0930		
	SILT, black 10YR 2/1, organic roots, very thin layer 2-4 mm, on top of: sandy SILT, brown 10YR 4/3 med dense, roots throughout, moist ML (90% fines, 10% fine sand trace med sand, trace gravel)									
8.5	Granodiorite boulder, slightly weathered, fractured									@ 6.5 ft. weathered bedrock
10.0	well graded SAND w/ silt and gravel, dark grayish brown 2.5Y 4/2, loose moist, angular to subrounded cobbles weathered rock, @ 6.5 ft SW-SM (20% coarse sand 20% med. sand 20% fine sand, 20% gravel, 20% SILT, TRACE CLAY)									@ 8.5 ft bedrock/boulder
	granodiorite / igneous bedrock / bedrock									end of boring at 10.0 ft. backfilled w/ cuttings 6" clean sand
	END OF BORING AT 10.0 FT									

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SS = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC-4	Hole ID: PR79-SB-117
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 05-11-20 1215
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-11-20
Drilling Equipment: Rotosonic	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-11-20
Drilling Method: Rotosonic	Logged By: J. Sh	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: 56° g m	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.75	sandy SILT, strong brown, 7.5YR 4/6 mod. dense, ML (65% fines, 25% sand (15% fine sand, 5% med, 5% coarse) 10% gravel, roots throughout moist, trace CLAY		ML	5L/60	S	1	0.0	1225		1
	well graded SAND with gravel, loose moist, brown predominantly 10YR 5/3, large cobbles subrounded SW (30% medium sand, 25% coarse 25% fine sand, 20% gravel trace fines		SW							
5				5S/60	S	2	0.0	1230		SPLP metals VOCs
8.0	SILT, very dark gray, 2.5Y 3/1 thin layer (2-3mm) with organics spongey, moist, ML (90% fines, 10% fine sand, becoming very dark brown 7.5YR 2.5/3, trace organics below this black layer (residual soil horizon)		ML							0-8ft Fill @ 8ft residual soil layer
8.5			SM							
10	silty SAND, strong brown, 7.5YR 4/6 dense, sub-rounded cobbles throughout SM (50% fine sand, 15% med sand, 5% coarse sand, 20% fines, 10% gravel moist									
	END OF BORING @ 10.0ft Backfilled w/cuttings. Clean sand 0-0.5ft									
15										

Tracking Codes: 10/18/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM

Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: AOC-4	Hole ID: PR79-SB-117
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 05-11-20 1215
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-11-20 1230
Drilling Equipment: Rotosonic	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-11-20 1235
Drilling Method: Rotosonic	Logged By: J. Shaun	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: 56; light rain	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted / Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.75	sandy SILT, strong brown, 7.5YR 4/6 mod. dense, ML (65% fines, 25% sand (15% fine sand, 5% med, 5% coarse) 10% gravel, roots throughout moist, trace CLAY		ML	5L/60	S	1	0.0	1225		PR79-SB-117-AS-01 0-2ft 1230 SVOCs, metals, pH, TOC Grain size SPLP metals
			SW							
	well graded SAND with gravel, loose moist, brown pedominates 10YR 5/3, large cobbles subrounded SW (30% medium sand, 25% coarse sand, 25% fine sand, 20% gravel, trace fines									PR79-SB-117-BS-01 8-10ft 1230 SVOCs, metals SPLP metals VOCs
5				5S/60	S	2	0.0	1230		
8.0	SILT, very dark gray, 2.5Y 3/1 thin layer (2-3mm) with organics spongey, moist, ML (90% fines, 10% fine sand, becoming very dark brown 7.5YR 2.5/3, trace organics below this black layer (residual soil horizon)		ML							0-8ft Fill @ 8ft residual soil layer
8.5			SM							
10	silty SAND, strong brown, 7.5YR 4/6 dense, sub-rounded cobbles throughout SM (50% fine sand, 15% med sand, 5% coarse sand, 20% fines, 10% gravel moist									
	END OF BORING @ 10.0ft Back filled w/ cuttings. Clean sand 0-0.5ft									
15										

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

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Boring Log

Sheet 1 of 2

Project Name: Former NIKE PR-79 Control Area	Site: ADC-4	Hole ID: PR79-SB-118 /MW-008
Project Number: 60608703	Northing: See field report	Total Depth (feet): 15.0 ft
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 05-11-2020 1040
Driller: Mark Schock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-11-2020 1100
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-11-2020 1130
Drilling Method: Rotosonic	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: overcast, 62°, partly cloudy, wind S 11-17 mph	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.0	SAND w/gravel, strong brown 7.5YR 4/6 loose, moist, roots and organics SW (50% coarse sand, 20% medium sand, 10% fine sand, 20% gravel) trace fines becoming brown @ 0.5ft cobbles throughout, sub-rounded to sub angular		SW	45/60	5	1	0.0	1045		PR79-SB-118-AS-01 @1045 0-2ft SVOCs, metals, pH, TOC SPLP metals, Grain size MS/MSD
3.5	silty SAND w/gravel, mottled yellowish brown 10YR 5/4 (50%) grayish brown 2.5Y 5/2 (50%), very dense, moist, cobbles sub rounded SM (40% fine sand, 15% med. sand, 10% coarse sand, 20% fines, 15% gravel)		SM	49/60	5	2	0.0	1052		PR79-SB-118-BS-01 @1100 8-10ft SVOCs, metals VOCs, SPLP metals MS/MSD
7.5	well graded SAND w/gravel, mottled gray 5Y 6/1 (75%) and black 5Y 2.5/2 (25%) loose, angular to sub-rounded cobbles throughout. SW (50% med sand, 15% fine sand, 10% coarse sand, 25% gravel, trace fines) very loose, slightly moist		SW							
8.5			SM							
9.5										
10	sandy SILT w/gravel, ML (55% fines, 15% gravel, 30% sand (15% fine, 10% med) 5% coarse, dark brown 7.5YR 3/3 very dense, slightly moist			48/60	5	3	0.0	1100		
12.0	well graded SAND w/gravel, dark grayish brown 2.5Y 4/2, loose, moist, SW (50% med. sand, 20% fine, 10% coarse, 15% gravel, 5% fines) (continued)		SW							
15										

Tracking Codes: 10/18/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area 1	Site: ADC-4	Hole ID: PR79-SB-108/MW-008

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	@12.0 ft Boulder cored through, granodiorite, very hard, slightly weathered around fractured edges, smooth fractures silty sand infilling between pieces									
	@ 13.5 - 14.0 ft gray/brown med. SAND with angular to sub angular cobbles SW (5% fine sand, 25% medium sand, 10% coarse sand, 10% gravel, 5% silt)									
	@ 14.0 ft weathered bedrock, granodiorite large piece > 6.0 ft, slightly weathered edges along horizonal fractures									
20										
	END OF BORING @ 15.0 ft MW-008 screened 4-14 ft Details on MW Construction Form MW-008									
25										
30										

Tracking Codes: 10/19/12, 12:20

Form: 00-BLANK LOG

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: ADC-4	**Hole ID:** PR79-SB-119
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report for data	Date / Time Started: 05-11-20 0920
Driller: M. Schock (Mark)	Elevation (feet MSL): *Ground:* See field report	Date / Time Finished: 05-11-20 0945
Drilling Equipment: Rotosonic	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-11-20 1000
Drilling Method: Rotosonic	Logged By: J. Moman	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Sunny, 50°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	SAND w/gravel, dark brown 10YR 3/3 loose, wet SW (60% medium sand, 10% coarse sand, 5% fine sand, 20% gravel, 5% fines. Roots and organics, w		SW	54/60	S	1	0.0	0930		PR79-SB-119-AS-01 0-2ft @ 1015 SVOCs, metals, pH, TOC Grain size SPLP Metals
2.0	silty SAND w/gravel, dark yellowish brown 10YR 4/6, dense, moist, sub-rounded cobbles SM (40% med. sand, 10% fine sand, 5% coarse sand, 25% fines, 20% gravel)		SM							
3.0			ML							
4.0			SM							
4.5			WR							
5.0	SAA, except color is very dark brown 10YR 2/2									PR79-SB-119-BS-01 8-10ft @ 1030 SVOCs, metals SPLP metals VOCs
	dry, dense SILT w/sand, dark gray 2.5Y 4/1, with horizontal banding 2mm thick yellowish brown ML (65% fines, 25% sand (15% fine sand, 5% med, 5% coarse) 10% gravel)		SM	59/60	S	2	0.0	0945		
9.0	silty SAND w/gravel, yellowish brown 10YR 5/4, dense, dry, sub-angular to sub-rounded cobbles, SM (40% med. sand, 10% fine sand, 5% coarse sand, 25% fines, 20% gravel		SM							
10.0	weathered rock, greenish / gneiss, easily crumbled by hand, highly weathered, Fe staining (WR weathered rock		END OF Boring 10.0 ft							
	silty SAND w/gravel, dark gray, 2.5YR 4/1, moist, loose, large cobbles, sub angular to sub-rounded SM (40% med. sand, 10% fine sand, 10% coarse sand, 25% gravel, 15% fines (continued)									

Tracking Codes: 10/18/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area	Site: AOC-4	Hole ID: PR79-SB-169

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
10	becoming dark grayish-brown 10YR 7/2 @ 7.0ft									
	@ 9.0ft silty SAND, gray, very dense, dry, 2.5Y 6/1 SM (10% fine sand, 10% med sand, 5% coarse sand, 5% gravel, 20% fines)									
20	end of Boring at 10ft.									
25										
30										

Tracking Codes: 10/19/12, 12:20

Form: 00-BLANK LOG

AECOM

Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: ADC-1	Hole ID: PR79-SB-120
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 2.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 05-15-20 1020
Driller: Dylan Potter - AECOM	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-15-20 1045
Drilling Equipment: Hand auger 6.0"	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 05-15-20 1050
Drilling Method: Hand auger	Logged By: J. Sloman	Checked By: AKB
Borehole Diameter (inches): 3.0	Weather/Comments: Sunny, 50°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	silty SAND, dark brown, 7.5YR 3/4 loose, dry roots + organics SM 70% sand, 30% fines, trace gravel		SM	6/6	HA	1	0.0	1025		PR79-SB-120-AS-01 0.2 ft @1045 SVOC, metals, pH, TOC SPLP metals Grain Size
			SM	6/6	HA	2	0.0	1035		
				6/6	HA	3	0.0	1045		
2.0	silty SAND, yellowish brown 10YR 5/3, Med. dense, dry, SM (80% sand, 15% fines, 5% gravel			6/6	HA	4	0.0	1055		
	END OF BORING @ 2 ft Soil replaced into borehole									
5										
10										
15										

Tracking Codes: 10/19/12, 1221

USCS Name, Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Soil Boring Log

Project Name: MKE 1279 Control Area	Site: AOC - 3	Hole ID: MW-0065
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 15.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 05-07-20 0820
Driller: Mark Schack	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 05-07-20 0935
Drilling Equipment: Rotosonic	▼ Water Depth During Drilling (feet bgs): N.A	Date / Time Completed: 05-07-20 1030
Drilling Method: Roto Sonic	Logged By: J. Shahan	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: sunshine, 50°, wind NW at 8mph (previous night had rain)	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	silty SAND, dark brown, 10YR 3/3 mottled with roots throughout, spongey, slightly moist SM (85% sand, 15% fines, trace gravel)		SM	41/60	S	1	0.0	0830		No samples
			SW				0.0			
2.0	SAND, yellowish brown, loose, slightly moist, 10YR 5/6, SW (95% sand 5% fines, trace gravel)		SM				0.0			
3.0	silty SAND, mottled gray 2.5Y 5/1 (60%) dark yellowish brown 10YR 4/6 (30%) black 10YR 2/1 (10%), very dense slightly moist, SM (65% sand, 25% fines, 10% gravel) coarse gravel pieces up to 2" subangular to rounded		GW				0.4			Glacial Till 3.0 ft
5				12/12	S	2	0.2 / 0.3			
5.5 / 6.0	GRAVEL with SAND olive brown 2.5Y 4/4 (80%) and gray 5Y 6/1 (20%), loose, dry, GW (75% gravel, 20% sand, 5% fines) cobbles sub-rounded to sub-angular		GW	55/60	S	3	0.0			weathered bedrock 6.0 - 11 ft
			GW-GM							
10	Granodiorite cobble >6.0" oxed through, highly weathered clay edges, w/ rock dust		GW							Bedrock 11.0 ft
11.0	GRAVEL with SAND very dark gray 5Y 3/1 with large cobbles of rock, highly to slightly weathered GW (75% gravel, 20% sand, 5% fines) (85-9.5 ft. GW-GM Gravel with SILTED SAND)		BR	45/60	S	4	0.0			Encount Boring at 15.0 ft MW-0065 will be installed, details on MW 006 Monitoring Well Construction Form
	Bedrock, granodiorite, very strong, phaneritic, non-foliated, massive, fresh, competent, highly fractured, steeply dipping fractures 14.0 ft									
15										

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Tracking Codes: C:\DOCUMENTS AND SETTINGS\JARSENEAUX\DOCUMENTS\PROJECTS\MKE POMPTON\LULU\AEI GPJ, AB\10, 15 05

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Background Soil Boring Logs

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area East	Hole ID: PR79-SB-121
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 4.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4-29-30 1020
Driller: L. Tatum - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4-29-30 1030
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-29-30 1040
Drilling Method: DP	Logged By: J. Shoman	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: Sunny, 52°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.33	0-4" silty SAND, strong brown 7.5YR 2.5/2, moist, mod. dense SM (SAND 60% fine 35%, 5% gravel) roots and leaves throughout		SM	48/48	DP	1	0.0	1030		PR79-SB-121-AS-01 0-2 ft 1040 SVOCs, metals
2	4"-2ft sandy SILT, dark yellow brown 10YR 4/4 moist mod. dense, ML (Fine, 60% SAND 35% 5% gravel)		ML							PR79-SB-FD-05-01 0-2 ft 1045 SVOCs, metals
4	2-4 ft sand GRAVEL, black 2.5Y 2.5/1, gray 2.5Y 6/1 and yellowish brown 10YR 5/6 rock and decomposed rock fragments. loose, dry GM (Gravel 60%, SAND 30%, Fines 10%)		GM							PR79-SB-121-BS-01 2-4 ft 1040 VOCs, SVOC, metals
										PR79-SB-FD-06-01 1045 VOCs, SVOC, metals
10	END OF BORING @ 4.0 ft Backfilled w/ cuttings and topped off with 6" clean sand									Weathered Bedrock or Cobble field at 4 ft
15										

Tracking Code: 10/18/12, 1221

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - East	Hole ID: PR79-SB-122
Project Number: 60608703	Northing: See field report or data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 4.28.20 1225
Driller: L. Tatum	Elevation (feet MSL): Ground: S f ld port	Date / Time Finished: 4.28.20 1235
Drilling Equipment: Geoprobe	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.28.20 1340
Drilling Method: direct push	Logged By: J Shannon - AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: overcast, cool, partly cloudy 45°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
4"	sandy SILT, black, 5YR 2.5/1, moist, loose, mod. plastic, MH (85% fines, 15% sand) Contains roots and organic matter		MH	43/60	DP	1	0.0	1225		PR79-SB-122-AS-01 0-2 ft @1240 SVOCs, metals
2.0	sandy SILT, reddish-yellow 5YR 6/8, moist, loose, mod. plastic MH (85% fines, 15% sand, trace gravel)		ML							
4.0	silty SAND, reddish brown, 5YR 5/4, moist, loose, SM (70% sand, 25% fines, 5% gravel)		SM							PR79-SB-122-BS-01 8-10 ft @ 1240 VOCs, SVOCs, metals
5			SM	52/60	DP	2	0.0	1235		
7.0	silty SAND, light gray, 2.5Y 7/1, dense, dry SM (75% sand, 15% fines, 10% gravel)		SM							
10	silty SAND w/gravel, grayish brown (2.5Y 5/2) 60%, black 2.5Y 2.5/1 20%, light yellow brown 10YR 6/4 dry, mod. dense. SM (60% sand 20% fines, 20% gravel)									
	END OF BORING Backfilled with cuttings topped off with 6" clean sand									
15										

Tracking Codes: 10/19/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - East	Hole ID: PR79-SB-123
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 6.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4.28.20 1500
Driller: L. Tatum - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4.28.20 1515
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.28.20 1525
Drilling Method: direct push	Logged By: John Shaman - AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: SUNNY, 50°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	sandy SILT, very dark brown, 10YR 2/2 wet, spongy, low plastic ML (85% fines, 10% sand, 5% gravel)		ML	46/48	DP	1	0.0	1500		PR79-SB-123-AS-01 0-2 ft @ 1500 SVOCs, metals
3.0	silty SAND, dark brown, 2.5YR 3/3 moist, loose, SM (80% sand, 15% fines, 5% gravel		SM							
	silty SAND with gravel, grayish brown 2.5YR 5/2, dry, dense SM (65% sand, 30% fines, 5% gravel @ 5.5' weathered rock pieces, black + white fine grained, highly weathered		SM	20/24	DP	2	0.0	1515		PR79-SB-123-BS-01 4-6 ft @ 1500 VOCs, SVOCs, metals
6.0	END OF BORING @ 6 ft Backfilled w/ cuttings 6" sand on top (clean sand)									
5										
10										
15										

Tracking Codes: 1013/12, 1221

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form. 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - East	Hole ID: PR79-SB-124
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 8.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 4/29/20 0920
Driller: L. Tatum - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4.29.20 0930
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 4.29.20 0935
Drilling Method: direct push	Logged By: John Shamen - AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: 52°, sunny	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5 — 0-6"	silty SAND, strong brown 7.5YR 2.5/2, dry, mod dense, non plastic, SM (sand 60%, fines 35%, gravel 5%) roots and leaves		SM	48/60	DP	1	0.0	0930		PR79-SB-124-AS-01 0-2' @ 0930 SVOCs, metals
2	sandy SILT, dark yellowish brown 10YR 4/4, moist, loose, med. plastic, ML (fines 60%, sand 35%, 5% gravel) rare roots throughout		ML							PR79-SB-124-BS-01 6-8 ft @ 0930 VOCs, SVOCs, metals
5	sandy GRAVEL, black 10YR 2/2 and grayish brown 10YR 5/2, fine grained rock, decomposed granite, mod. dense, poorly sorted GM (60% gravel, 30 sand, 10% fines)		GM		DP	2	0.0	0935		
8	END OF BORING									
10										
15										

Tracking Codes: 10/18/12, 1221

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area East	**Hole ID:** PR79-SB-125
Project Number: 60608703	*Northing:* See field report	Total Depth (feet): 4.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report	Date / Time Started: 4.28.20 1150
Driller: Matt Schlack-Glacier	Elevation (feet MSL): *Ground:* See field report	Date / Time Finished: 4.28.20 1200
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.28.20 1205
Drilling Method: direct push	Logged By: John Shannon-AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: partly cloudy, 45°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.25	sandy SILT, very dark brown 10YR 2/2 moist, loose low plastic ML (65% fines, 15% sand, trace gravel)		ML	44/48	DP	1	0.0	1155		PR79-SB-125-AS-01 0-2ft @ 1200 SVOCs, metals
2.5	silty SAND, dark brown 2.5YR 3/3 moist, loose SM (80% sand, 15% fines 5% gravel)		SM							PR79-SB-125-BS-01 2-4 ft @ 1200 VOCs, SVOCs, metals
4.0	silty SAND w/gravel light brownish gray 2.5YR 6/2, dry dense SM (60% sand, 25% fines, 15% gravel)		SM							
5	END OF BORING @ 4.0ft Backfilled w/ cuttings Cleansurf xp 6"									
10										
15										

Tracking Codes: 101912, 1221

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture. (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - East	Hole ID: PRA-SB-126
Project Number: 60608703	Northing: See field Report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 04 29.20 1300
Driller: L. Tatum	Elevation (feet MSL): Ground See report	Date / Time Finished: 04.29.20 1320
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): N/A	Date / Time Completed: 04.29.20 1330
Drilling Method: Direct push	Logged By: J. Shaman	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: SUNNY, 57°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted/Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	sandy SILT strong brown 7.5YR 2.5/2 dry, loose, w/roots and organic matter ML (70% fines, 30 sand, trace gravel)		ML	40/60	DP	1	0.0	1305		PRA-SB-126-AS-01 0-2 ft @ 1320 SVOCs, metals
2.0	sandy SILT, dark yellow brown 10YR 4/4, moist, dense ML (70% fines 30% sand, trace gravel)		ML							PRA-SB-126-BS-01 8-10 ft VOCs, SVOCs, metals @ 1320
4.0	GRAVEL w/sand, black 2.5Y 2.5/1 (40%) gray 2.5Y 6/1 (30%), yellowish brown 10YR 5/6 (30%) mottled, mod. dense, dry, some roots GW (60% gravel, 30% sand, 10% fines)		GW							
5	silty SAND, gray, 2.5Y 6/1, dense dry SM (75% sand 15% fines, 10% gravel) sub-rounded to angular rock (gneiss) fragments		SM	22/42	DP	2	0.0	1315		
9.0	silty SAND w/gravel yellowish brown 10YR 5/6 (70%) and black 10YR 2/1 (30%) weathered rock (gneiss) fragments, easily crumbled by hand, SM (65% sand 20% fines, 15% gravel)		SM	10/18	DP	3	0.0	1320		
10	END OF BORING @ 10.0 ft Backfilled with cuttings & 6" clean sand, capped w/									
15										

Tracking Codes: 10/18/12, 1221

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Outside	**Hole ID:** PR79-SB-127
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 4.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report	Date / Time Started: 4-28-20 1430
Driller: L. Tatum - Glacier	Elevation (feet MSL): *Ground:* See field report	Date / Time Finished: 4-28-20 1440
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-28-20 1445
Drilling Method: direct push	Logged By: John Shomon - AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: sunny, cool 50°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	sandy SILT, very dark brown, 10YR 2/1 moist, spongy texture - roots, slightly plastic ML (85% fines, 15% fine to med sand, trace gravel)		ML				0.0	1430		PR79-SB-127-AS-01 0-2 ft @ 1435 SVOCs, metals
1.			ML							
2.0	as above, less roots (5%) becoming strong brown 7.5 YR 5/6, moist		SM		▽					PR79-SB-127-BS-01 2-4 ft @ 1405 VOCs, SVOCs, metals
4.0	silty SAND, grayish brown 2.5Y 5/2, dry, dense SM (50% fine sand, 15% fine to coarse sand, 25% fines, 10% gravel) @ 4 ft rock fragment, granodiorite, weathered, sub angular.									Till apparently @ 2-4 ft.
	END OF Boring @ 4 ft Backfilled w/cuttings and 6" clean sand									
5										
10										
15										

Tracking Code: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). **Moisture**, (dry, moist, wet). Color. **Gradation** (relative percentages of soil components). **Plasticity/Cohesiveness** (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). **Stratification/Structure** (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM

Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background AREA - EAST	Hole ID: PR79-SB-128
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 8.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4-29-20 1435
Driller: L. Tatum - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4.29.20 1440
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.29.20 1445
Drilling Method: Direct Push (DP)	Logged By: J. Shaman	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: Mostly sunny, 57°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.8	0-8" sandy SILT, strong brown 7.5YR 2.5/2, moist, spongy, mod. dense, ML (FINES 70% SAND 30%) crisis and leaves - organics		SM	52/60	DP	1	0.0	1435		PR79-SM-128-AS-01 0-2 ft @ 1440 SVOCs, metals
3.0	8"-3ft sandy SILT, dark yellowish brown 10YR 4/4, moist, mod dense, highly plastic, roots trace + throughout		MH							
	3ft - 8.0ft SAND w SILT, light brownish gray 2.5YR 6/2, dense, SM (SAND 60%, FINES 35%, gravel 5%) Sand portion 30% fine sand, 20% med, 10% coarse		SM	29/36	DP	2	0.0	1440		PR79-SM-128-BS-01 6-8 ft @ 1440 SVOC, VOC, metals
8.0	End of boring @ 8.0 ft Backfilled with cuttings and 6" clean sand									

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form: 00-BLANK LOG

AECOM
Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - East side	**Hole ID:** PR79-SB-129
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report	Date / Time Started: 04-28-2020 @ 1300
Driller: L. Tatum - Glacier	Elevation (feet MSL): *Ground:* See field report	Date / Time Finished: 04-28-2020 @ 1310
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 04-28-20 @ 1315
Drilling Method: direct push	Logged By: John Sharma - AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: Sunny, cool 50°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	sandy SILT, very dark brown, 10YR 2/2, spongey texture - roots throughout, slightly moist, slightly plastic fines, ML (80% fines, 15% fine sand, 5% med to coarse sand, trace clay and gravel)		ML	40/60	DP	1	0.0	1300		PR79-SB-129-AS-01 0-2 ft @ 1310 SVOCs, metals MS/MSD
2.0			ML							
	sandy SILT, dark brown, 2.5YR 3/3, dense, slightly moist, roots ML (75% fines, 20% fine to medium sand 5% gravel)		SW							PR79-SB-129-BS-01 8-10 ft @ 1310 VOCs, SVOCs, metals MS/MSD
5.0	well graded SAND w/gravel, brown strong 7.5YR 5/6 (75%) dark brown 7.5YR 3/4 (25%) mottled, sub-angular to sub-rounded rock fragments (gneiss) SW (80% sand, 15% gravel, 5% fines, (40% fine sand, 25% med, 15% fine sand) dry, dense		SM	40/60	DP	2	0.0	1310		
10.0	silty SAND w/gravel, grayish brown 2.5Y 5/2 with some black mottled, very dense, moist, angular to sub-rounded rock fragments w/Fe staining, SM (70% sand, 20% fines, 15% gravel)									
	END OF BORING @ 10.0 ft Backfilled w/ drill cuttings and 6" clean sand									
15										

Tracking Code: 10/19/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - East	Hole ID: PR79-SB-130
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 6.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4-29-20 1125
Driller: L. Tatum - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4.29.20 1135
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.29.20 1140
Drilling Method: Direct push	Logged By: J. Thomas	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments:	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0	0-0.5 sandy SILT, very dark brown, 10YR 2/2, dry, mod. dense, ML (Fines 60%, SAND 35%, gravel 5%)		ML	55/60	DP	1	0.0	1125		PR79-SB-130-A1-01 0-2ft 1140 SVOCs, metals
0.5	0.5-2ft silty SAND, dark yellowish brown 10YR 4/4, moist, loose, some gravel pieces - quartzite, biotite SM (70% SAND, 25% FINES, 5% Gravel)		SM							PR79-SB-130 B1-01 2-6ft @1140 VOCs, SVOCs, metals
2	2-5.5ft fine SAND, yellowish brown 10YR 5/4, mod dense, dry SM (70% SAND, 30 fines, trace gravel - few 1" pieces gneiss		SM	12/12	DP	2	0.0			
5	5.5-6ft fine SAND, grayish brown 2.5Y 5/2, dense, dry SW (SAND 90%, FINES 5% GRAVEL 5%)		SW							
ST 6ft	END OF BORING @ 6ft Backfilled w/cuttings and 6" clean sand									
10										
15										

Tracking Codes: 101912, 1221

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	**Hole ID:** PR79-SB-131
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 6.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report for data	Date / Time Started: 4-27-20 1200
Driller: Mark Schlock - Glacier	Elevation (feet MSL): *Ground:* see field report	Date / Time Finished: 4-27-20 1220
Drilling Equipment: Sonic Drill Rig	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 4-27-20 1225
Drilling Method: Sonic	Logged By: J. Shaman - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: rainy, cold 35-40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	SILT, black 10YR 2/1 dry, spongy texture w/ abundant roots, low plastic, ML (70% fines, 20% fine sand, 10% med. sand, trace coarse sand and gravel) moist		ML	60/72	S	1	0.0	1210		PR79-SB-131-AS-01 0-2 ft @ 1240 SVOCs, metals
1.5	Same as above, less roots, trace clay, low plastic, strong brown 7.5YR 5/6 moist		ML							
3.5	Well graded SAND, grayish brown 2.5Y 5/2 loose, moist, SW (85% sand, 10% gravel, 5% fines)		SW							PR79-SB-131-BS-01 4-6 ft @ 1240 VOCs SVOCs, metals
6.0	Silty SAND, dark grayish brown 2.5Y 4/2, dense, dry, cobbles sub-angular to sub-rounded, SM (70% sand, 20% fines, 10% gravel		SM							
	End of boring at 6.0 ft Backfilled w/ cuttings 6" clean sand									

Tracking Codes: 10/19/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	**Hole ID:** PR79-SB-132
Project Number: 60608703	*Northing:* See field report for data	Total Depth (feet): 4.0
Drilling Contractor: Glacier Drilling	*Easting:* See field report for data	Date / Time Started: 4.28.20 0930
Driller: Matt Schlack-Glacier	Elevation (feet MSL): *Ground:* See field report	Date / Time Finished: 4.28.20 0940
Drilling Equipment: Sonic Rig	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.28.20 0950
Drilling Method: sonic	Logged By: J. Shamon - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: overcast, cool 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.25	sandy SILT, black 5YR 2.5/1, moist, loose, mod. plastic ML (80% fines, 20% sand (fine to med), trace coarse sand and gravel roots, spongy texture		ML	46/48	S	1	0.0	0940		PR79-SB-132-AS-01 0-2 ft @ 0950 SVOCs, metals
3.0	silty SAND, reddish brown 5YR 5/4, wet, loose, SM (70% sand, 25% fines, 5% gravel		SM							PR79-SB-132-BS-01 2-4 ft @ 1000 VOCs, SVOCs, metals
4.0	silty SAND w/gravel, grayish brown, 2.5Y 5/2 80% & black 10% 2.5Y 2.5/1 dense, moist SM (65% sand, 20% fines, 15% gravel)									
5	End of boring @ 4.0 ft Backfilled w/cuttings and 6" clean sand									
10										
15										

Tracking Code: 10/19/12, 1221

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	Hole ID: PR79-SB-133
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 4.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4-28-20 1010
Driller: L. Tatum	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4-28-20 1015
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-28-20 1025
Drilling Method: direct push	Logged By: J. Shannon - AECOM	Checked By: ACB
Borehole Diameter (inches): 2.0	Weather/Comments: overcast, 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	SIL w/SAND, very dark brown, 7.5YR 2.5/3, sponger, roots & organics, Moist, ML (75% fines, 20% sand, 5% gravel)		ML	36/48	DP	1	0.0	1015		PR79-SB-133-AS-01 0-2 ft @ 1030 SVOCs, metals
2.0	silty SAND, brown, 10YR 4/3, moist loose to med. dense, SM (70% sand, 28% fines, 5% gravel) trace fines, roots		SM							PR79-SB-133-BS-01 2-4 ft @ 1020 VOCs, SVOCs, metals
4.0	well graded SAND, mottled yellowish brown 10YR (5/6) 50%, grayish brown 2.5Y 5/2 40% black 10% SW (med. to coarse sand 70%, fine sand 20%, gravel 10%, trace fines) med. dense		SW							
5										
10	END OF BORING @ 4.0 ft Backfilled w/cuttings topped off w/6" clean sand									
15										

Tracking Codes: 10/16/12, 1221

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	**Hole ID:** PR79-SB-134
Project Number: 60608703	*Northing:* See field Report for Data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	*Easting:* See Field Report	Date / Time Started: 4-27-20 1415
Driller: Mark Schlosk - Glacier	Elevation (feet MSL): *Ground:* See field Report	Date / Time Finished: 4.27.20 1425
Drilling Equipment: Sonic Drill Rig	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed 4.27.20 1435
Drilling Method: Sonic	Logged By: John Shannon - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: Rainy, cold, 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	SILT w/SAND, very dark brown, 7.5 YR 2.5/3, spongey texture, roots & organics, moist ML (70% fines, 25% sand (mostly fine to med.) 5% coarse sand & gravel		ML	52/60	S	1	0.0	1420		PR79-SB-134-AS-01 0-2 ft @ 1450 SVOCs, metals
1.0	silty SAND brown 10 YR 4/3 moist, mod. dense, roots, SM (50% fine sand, 20% med to coarse sand, 25% fines, 5% gravel)		SM							PR79-SB-134-BS-01 8-10 ft @ 1500 VOCs, SVOCs, metals
5				55/60	S	2	0.0	1425		
6.5	SAA, color change to mottled brown 10 YR 4/3 80% and light brownish gray 2.5 YR 6/2 30%, 10% black		SM							
	becoming dense, angular to sub angular to sub-rounded cobbles									
10.0	END OF BORING @ 10.0 ft Backfilled w/c things topped off w/6' clean #2 sand									
15										

Tracking Codes: 1071912, 1221

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	Hole ID: PR79-SB-135
Project Number: 60608703	Northing: See Field Report for data	Total Depth (feet): 6.0
Drilling Contractor: Glacier Drilling	Easting: See Field Report for data	Date / Time Started: 4.27.20 1250
Driller: M. Schlack	Elevation (feet MSL): Ground: See Field Report	Date / Time Finished: 4.27.20 1315
Drilling Equipment: Rotosonic Drill Rig	∇ Water Depth During Drilling (feet bgs):	Date / Time Completed: 4.27.20 1325
Drilling Method: Rotosonic	Logged By: John Sherman - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: cold, rainy, 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted / Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	silty SAND, dark brown 7.5 YR 3/3 loose, slightly moist, roots and organic throughout SM (70% medio fine sand, 20% fines 10% coarse sand and gravel		SM	65	S	1	0.0	1300		PR79-SB-135-AS-01 0-2 ft @ 1300 SVOCs, metals
1.0	silt w/sand, yellowish brown 10YR 5/8, moist, loose to med. dense, slightly plas c, ML (80% fines, 20% med to fine sand, trace coarse sand and gravel		ML / SM	72						PR79-SB-135-BS-01 4-6 ft @ 1315 VOCs, SVOCs metals
5										
5.5	silty SAND, mottled grayish brown 2.5 Y 5/2 (70%) strong brown 7.5 YR 5/6 (20%) black 10%, moist, trace organics, SM (75% sand fine to med, 15% fine w/clay, 10% coarse sand-gravel) sub-angular to sub-rounded cobbles		SM							
6.0										
10	well graded SAND, gray 2.5 Y 5/1 and black (75/25%) cobbles sub angular to sub rounded, slightly weathered SW (85% fine to coarse sand, 15% fines, 20% gravel)		SW							
	End of Boring @ 6.0 ft Backfilled w/cuttings Topped off w/6" clean sand									
15										

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture. (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
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Project Name: Former NIKE PR-79 Control Area	Site: Background - North Area	Hole ID: PR79-SB-136
Project Number: 60608703	Northing: See field Report for data	Total Depth (feet): 6.0
Drilling Contractor: Glacier Drilling	Easting: See field report	Date / Time Started: 4-27-20 1350
Driller: M. Schlack - Glacier	Elevation (feet MSL): Ground: See field Report	Date / Time Finished: 4-27-20 1400
Drilling Equipment: Rotosonic Rig	▽ Water Depth During Drilling (feet bgs):	Date / Time Completed: 4-27-20 1415
Drilling Method: Sonic	Logged By: J. Sharman - AECOM	Checked By: ACB
Borehole Diameter (inches): 6.0	Weather/Comments: cold rainy, 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) (Field Duplicates)
0.5	silty SAND w/gravel, dark brown 7.5YR 3/4, loose, spongey w/roots, dry to slightly moist SM (70% medium fine sand, 20% fines, 10% coarse sand + gravel)		SM	65/12	S	1	0.0	1400		PR79-SB-136-AS-01 0-2 ft @ 1400 SVOCs, metals
3.0	silt w/sand, brown with yellow 10YR 6/6, some roots, med. dense, moist, ML (65% fines, 30% sand fine to med, 5% coarse sand, trace gravel		ML							PR79-SB-F007-01 0-2 ft @ 1405 SVOCs, metals
5										
6.0	silty SAND with gravel, light brown/gray 2.5YR 6/2, moist dense SM (60% sand, 25% fines 15% gravel)		SM							PR79-SB-136-BS-01 4-6 ft @ 1410 VOCs, SVOCs, metals
	END OF BORING @ 6.0 ft Backfilled w/soil 6" clean sand									PR79-SB-F008-01 4-6 ft @ 1355 VOCs, SVOCs, metals
10										
15										

Tracking Codes: 10/18/12, 12:21

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
SB = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Boring Log

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	Hole ID: PR79-SB-137
Project Number: 60608703	Northing: See field Report for data	Total Depth (feet): 10.0
Drilling Contractor: Glacier Drilling	Easting: See Field Report for data	Date / Time Started: 4.27.20 1050
Driller: M. Schlack - Glacier	Elevation (feet MSL): Ground: See field Report	Date / Time Finished: 4.27.20 1100
Drilling Equipment: Rotasonic Drill	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.27.20 1110
Drilling Method: Sonic	Logged By: J Swanson - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: cold, rainy, 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.3	silty sand, very dark brown, 10YR 2/2, organic rich w/ roots throughout, moist SM (70% sand, 25% fines, 5% gravel)		SM	60/60	S	1	0.0	1100		PR79-SB-137-AS-01 0-2 ft @ 1115 SVOCs, metals
1.5	silty SAND w/ gravel, dark yellowish brown 10YR 4/4, moist, med. dense SM (50% fine to med sand, 15% coarse sand, 20% fines, 15% gravel		SM							PR-79-SB-137-AS-01 8-10 ft @ 1110 VOCs SVOCs, metals
5	silty SAND, yel & brown 10YR 5/8, dry, dense, cobbles, SM 75% sand, 20% fines, 5% gravel		SM	52/60	S	2	0.0	1110		
6.0	silty sand w/ gravel, grayish brown 2.5 YR 5/2, dry very dense SM (65% sand, 20% fines 15% gravel)									
10.0	END OF BORING @ 10 ft Backfilled w/ soil topped off w/ 6" fine sand									

Tracking Codes: 10/18/12, 12:21

USCS Name, Consistency/Density (predominently fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

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Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	Hole ID: PR79-SB-138
Project Number: 60608703	Northing: See Field Report for data	Total Depth (feet): 8.0
Drilling Contractor: Glacier Drilling	Easting: See Field Report for data	Date / Time Started: 4-28-20 0900
Driller: L. Tatum - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4-28-20 0915
Drilling Equipment: Geoprobe	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-28-20 0925
Drilling Method: direct push	Logged By: J. Sharma - AECOM	Checked By: AKB
Borehole Diameter (inches): 2.0	Weather/Comments: overcast, 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted/Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5 1.0	sandy SILT, strong brown 7.5 YR 4/6 mod. dense, spongy texture, moist roots + leaves ML (65% fines, 25% sand, 10% gravel)		ML SM	44/60	DP	1	0.0	0900		PR79-SB-138-AS-01 0-2 ft @ 0910 SVOCs, metals
3.0	silty SAND, loose, dry. 10 YR 5/3 SM (60% fine sand, 20% med sand, 20% fines, trace gravel) trace roots									PR79-SB-138-BS-01 6-8 ft @ 0915 VOCs, SVOCs, metals
5 6.0	becomes lighter @ 1-3', brownish yellow 10 YR 6/6, darker brown 3-6 ft		SM	30/36	DP	2	0.0	0910		
8.0 10	silty SAND, mottled dark yellowish brown 10 YR 4/6 (60%) gray 2.5Y 5/1 (35%) black 10%, very dense dry, SM (50% fine sand, 20% med to coarse sand 20% fines, 10% gravel. trace cobbles up to 1" sub-angular to sub-rounded @ 7.5' gravelly sand seam 1 in wide, weathered rock, angular to sub angular at 7.6'									
15	END OF BORING @ 8.0 ft Backfilled w/ cuttings 6" clean sand topped off									

Tracking Codes: 10/18/12, 1221

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

SN = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM

Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	Hole ID: PR79-SB-139
Project Number: 60608703	Northing: See Field Report for data	Total Depth (feet): 6.0
Drilling Contractor: Glacier Drilling	Easting: See Field Report for data	Date / Time Started: 4-27-20 0920
Driller: M. Schlock - Glacier	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4-27-20 0930
Drilling Equipment: Rotosonic Rig	∇ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4-27-20 0940
Drilling Method: Sonic	Logged By: J. Shannon - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: cold, rainy, 35°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	sand, SILT, strong brown 7.5YR 4/6, loose, moist, roots and leaves ML (65% fines, 30% sand, 5% gravel)		ML	40/48	S	1	0.0	0930		PR79-SB-139-AS-01 0-2 ft @ 0950 SVOCs, metals
2.0	silty SAND, dry, dense, mottled yellowish brown 10YR 4/6 and gray 2.5Y 5/1 (60-40), trace organics		SM							
4.0			SM	24/24	S	2	0.0	0940		PR79-SB-139 BS-01 4-6 ft @ 0945 VOCs, SVOCs, metals
5.0	becoming moist @ 2.0 ft									
6.0	becoming more gray than brown (70-30) @ 5 ft. cobbles sub rounded									
	END OF BORING @ 6.0 ft Backfilled w/ cuttings clean and #2 top 6.0"									
10										
15										

Tracking Codes: 10/18/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

AECOM

Boring Log

Sheet 1 of 1

Project Name: Former NIKE PR-79 Control Area	Site: Background Area - North	Hole ID: PR79-SB-140
Project Number: 60608703	Northing: See field report for data	Total Depth (feet): 4.0
Drilling Contractor: Glacier Drilling	Easting: See field report for data	Date / Time Started: 4.27.20 1510
Driller: M. Schlock	Elevation (feet MSL): Ground: See field report	Date / Time Finished: 4.27.20 1525
Drilling Equipment: Rotosonic Drill Rig	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 4.27.20 1535
Drilling Method: Sonic	Logged By: J. Shannon - AECOM	Checked By: AKB
Borehole Diameter (inches): 6.0	Weather/Comments: cold, rainy 40°	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
0.5	sandy SILT, strong brown 7.5YR 5/8 spongey texture w/roots		ML	48 48	S	1	0.0	1525		PR79-SB-140-AS-01 0-2 ft @1540 SVOCs, metals
2.5	silty SAND, light yellow brown 10YR 6/4, roots, mod. dense SM (65% sand, 30% fines trace 5% gravel)		SM							
3.5										
4.0	silty SAND w/ gravel, mottled brown and gray w/ trace to 5% black SM (65% sand 20% fines, 15% gravel) @ 3.5 fine black sand seam 2" (fine to med. sand									PR79-SB-140-BS-01 2-4 ft @1530 VOCs, SVOCs, metals
5										
10	End of Boring @ 4.0 ft Backfilled w/ cutting Clean sand topped off 6"									
15										

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Form 00-BLANK LOG

Bedrock Drilling Logs

AECOM
Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: AOC-1	Hole ID: PR79-BR-001
Project Number: 60608703	Northing: See Field Report for data	Total Depth (feet): 300 ft
Drilling Contractor: Glacier Drilling	Easting: See Field Report for data	Date / Time Started: 05-18-2020
Driller: A. Augustine	Elevation (feet MSL): Ground See field report	Date / Time Finished: 05-21-2020
Drilling Equipment: CME 850	▽ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 0617-2020
Drilling Method: Rotary Air Hammer	Logged By: J. Shaman - AECOM	Checked By: AKB
Borehole Diameter (inches): 5" @ 15 ft.+	Weather/Comments: cloudy, 56°, winds N at 4 mph, humidity 75%	

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	Classification name, color, mineralogical composition and percent, texture/grain size, structure, RQD, symbol									applied air pressure applied downward pressure drilling rates/5ft run "hard" or "soft" Δ air hammer bits water loss PZ-014 water level: 7.06 below top of casing @ 0920 05-18-2020 applied air pressures 125 psi downward pressure - 100 lbs Water from surface to 10+. Grout 10-15 ft
5										
	Soil Borings PR79-SB-107									
10	Bedrock. Granodiorite, very strong, pinkish gray 5YR (90%) black N1 (10%) plagioclase + biotite/hornblende quartz		II							
	END of CORE at 15 ft. (continued)									
15										

Tracking Codes: 10/19/12, 12:21

USCS Name. Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Boring Log (Continued)

Project Name: Former NIKE PR-79 Control Area	Site: AOC - 1	Hole ID: PR79 - BR - 001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
15	Hammer assembly 5'9" 5.75ft									
	20s/ft drill rate 125 psi, light brown 5YR 6/4, light brownish gray 5YR 6/1, dark gray N3 gravel sized pieces.		II	—	AH	1	0.0	1345		air pressure: 125 psi downward pressure: 100 lbs 5ft/5min = 6ft/min
20	40% black, 60% gray granodiorite		II	—	AH	2	0.0	1350 1400		5ft/8min = 0.625ft/min
25			II			3		1408 1414		5ft/6min = 0.83ft/min
26	granodiorite, 30% black (biotite/hornblende) 60% gray (feldspar) 10% white (quartz) / muscovite									
30										fracture at 30.0ft
31	SAA		II			4		1420 1423		5ft/5min = 1ft/min

Tracking Codes: 10/19/12, 12:20

Form 00-BLANK.LOG

6

AECOM

Soil Boring Log (Continued)

Sheet 3 of 4

Project Name: MKE PR-79	Site: AX-1	Hole ID: PR79-BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										air pressure - 125 psi; down pressure - 100 lb
			II	—	AH	4	0.0			
35										
36								1420		
	SAA		II			5		1433		Sft/6min = 0.71 ft/min
40										
41								1440		
	SAA		II			6		1442		5/ft/6min = 0.83 ft/min
45										
46								1490		
	SAA		II			7		1500		5ft/10min = 0.5 ft/min (Δ at drum, unplug line)
50										
51								1510		
	SAA, trace particles light brown 5YR 6/4		II			8		1530		

Form 70PLANX100

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis,
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Training Codes: C:\DOCUMENTS AND SETTINGS\LARSENEHJ\MY DOCUMENTS\PROJECTS\MKE POMPLIANO\LULU\AUEI GPJ 4/6/10, 15:05

AECOM

Soil Boring Log (Continued)

Sheet 4 of ~~3~~ 6

Project Name: MIKE PR-79	Site: ADC-1	Hole ID: PR79-BR-001

Depth (feet)	USCS Description (continued)	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										Air pressure - 125 psi down pressure ~ 100 lbs
	SAA		II			8				5ft/9min = 0.56 ft/min clogged line
55								1539		
	SAA					9		1542		<70 dB noise 5ft/8min = 0.625 ft/min
60								1545		
	SAA, slight fe staining appears in some pieces					10		1553		5ft/7min = 0.71 ft/min
65										
05-18 / 05-19								1600		
	SAA, 2% of black grains (biotite/hornblende) increasing to 5%					11		0916		05-19-2020 PZ-014 7.20 ft (toe) 70 gal water removed from borehole by air pressure air pressure - 125 down pressure - 100 lbs 5ft/4min = 0.625 ft/min
70								0922		
	SAA, trace amount of rust/staining					12		0925		5ft/8min = 0.625 ft/min

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USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (twinking: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

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AECOM

Soil Boring Log (Continued)

Sheet 5 of 16

Project Name: MIKE PR 79 | Site: AOC-1 | Hole ID: PR79. BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					12				0.625 ft/min
75								0933		
	SAA, no staining observed					13		0936		0.625 ft/min
80 40								0944		
	SAA					14		0948		like clogged w/cuttings hammer plugged and will be pulled. 1080 - bit cleared and being re-lowered
45								1038		
	SAA					15		105		0.625 ft/min
90										
91								1100		
	SAA							1113		0.625 ft/m

Form: PR PLANK LOG

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements: Geologic Origin

S# = Sample Number. SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Tracking Codes: C:\DOCUMENTS AND SETTINGS\JARSENE\MY DOCUMENTS\PROJECTS\MIKE POMPI\WONTAUL\LEI GPJ, AECOM, 15.05

AECOM
Soil Boring Log
(Continued)

Project Name: MKE PR79 | Site: AOC-1 | Hole ID: BE 001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					15				0.625 ft/min
95										
96								1121		
	SAA					16		1124		0.56 ft/min Driller noted a slower drill rate, no change in cuttings
100										
101								1133		
	SAA					17		1138		0.625 ft/min
105										
106								1146		
	higher % of fine material (55%) biotite/hornblende					18		1148		0.56 ft/min
	SAA									
110										
111								1157		
	SAA					19		1204		

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Form: 00-BLANK.LOG

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

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AECOM
Soil Boring Log (Continued)

Project Name: MKE PR79 | Site: AOC-1 | Hole ID: BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										Air pressure - 125 psi down pressure - 120 lbs
115 (35)						19		1211		
116	SAA, contain very fine grained, olive gray grains not being caught in screens, but accumulating in drum. SY 4/1 contains mica chips (>10%)					20		1226		0.625 ft/min
120 (40)								1237		
121	SAA					21		1240		0.45 ft/min (paused to blow out hammer bit)
125 (45)								1251		
126	SAA					22		1254		0.625 ft/min
130 (50)								1302		
131	SAA					23		1307		0.625 ft/min

Tracking Codes: C:\DOCUMENTS AND SETTINGS\ARSENI\MY DOCUMENTS\PROJECTS\MKE POUP\MKOTLUXLUALE\OP-1 4\9\10, 15:53

Form: 00-BLANK.LOG

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n= 16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements: Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM
Soil Boring Log
(Continued)

Sheet ~~3 of 3~~ 13 16

Project Name: MIKE PR-79	Site: ADC-1	Hole ID: BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										air pressure - 125 psi water pressure - 100 psi
135						73				
136								1305		
	SAA					74		1319		0.42 ft/min (hard drilling)
140										
								1331		
141	SAA					75		1337		0.56 ft/min
145										
								1346		
146	SAA					76		1350		0.5 ft/min
150										
								1400		
151	predominantly gray, both, fine patches of dark grains by pouring water					77		1410		

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Form: TEMPLATE.GPJ

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM
Soil Boring Log
(Continued)

Sheet ~~3 of 3~~ 9 of 16

Project Name: NIKE PR79	Site: ADC-1	Hole ID: BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	SAA					27				air pressure - 115 psi down pressure - 60 lbs 0.45 ft/min
155 ~~35~~										
156								1424		
	Very fine grain cuttings passing through screening, Larger grains still consistent w/ gradation.					28		1430		clogged line, clogged hose line for fine trick water, drilling proceed 0.38 ft/min
160 ~~40~~										
161								1493		
						29		1503		(pause for testing equipment)
165 ~~45~~										
166								1512		
						30		1520		0.5 ft/min
170 ~~50~~										
171								1530		
						31		1534		

Tracking Codes: C:\DOCUMENTS AND SETTINGS\LARSENE\MY DOCUMENTS\PROJECTS\NIKE POMPU\ANOLULU\ADLE1.GPJ, 4/8/10, 13:25

Scale: TO FLANK LOG

USCS Name, Consistancy/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Soil Boring Log (Continued)

Sheet ~~3 of 3~~ 10 16

Project Name: MKE PR 79	Site: ADC-1	Hole ID: PR79 - BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 130 lbs
						31		1534		0.5 ft/min
35										
176								1544		
	SAA					32		1548		0.5 ft/min
40										
181								1558		
						33		1606		0.5 ft/min
45										
5/12/20 186								1616		
5/20/20	fine grained particle increasing to 60-70% by volume. dark greenish gray 5G 4/1 very fine rock dust, flecks of biotite and muscovite mica					34		0947		P2-014 7.49 fpm @ 0845 0.55 ft/min
60										
191								0956		
						35		1000		0.55 ft/min

*USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

Tracking Codes: G:\DOCUMENTS AND SETTINGS\ARSENE\MY DOCUMENTS\PROJECTS\MINE POMPI\WOLUALUALE\GPJ 4/6/10, 15:05

AECOM

Soil Boring Log (Continued)

Sheet ~~3 of 3~~ 4 of 6

Project Name: MKE PR 79	Site: AOC-1	Hole ID: PR79-BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 120 165
						35				
35										
196								1009		
						36		1012		0.55 ft/min
40										
201								1021		
	SAA					37		1026		0.45 ft/min
45										
206								1037		
						38		1041		0.36 ft/min
50										
211								1055		
						39		1058		0.38 ft/min

Tracking Codes: C:\DOCUMENTS AND SETTINGS\JARSENE1\MY DOCUMENTS\PROJECTS\MKE POMPILIAN\OLULUALEI GP.L 4/6/10, 15:06

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Soil Boring Log (Continued)

Sheet ~~3 of 3~~ 12 16

Project Name: MKE PR79	Site: AOC-1	Hole ID: PR79-BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) soil pressure - 125 psi down pressure - 100 lbs
						39				
36										
216								1110		
	horizontal drilling					40		1113		0.38 ft/min
40										
221								1126		
						41		1131		0.33 ft/min
45										
226	trace light brown 5YR 5/6 grains of orthoclase feldspar							1146		
						42			1148	0.33 ft/min
50										
231									1203	
						43			1210	0.33 ft/min

Tracking Locks: C:\DOCUMENTS AND SETTINGS\ARSENEIWAY DOCUMENTS\PROJECTS\MKE POKPLAN\OLLUALLUALE.GPJ 4/8/10 15:18

Form: [illegible]

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding, horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements: Geologic Origin

S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.

BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM
Soil Boring Log
(Continued)

Sheet 13 16 ~~3 of 3~~

Project Name: NIKE PR 79	Site: AOC-1	Hole ID: PR-79 PR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi / drive pressure - 100 lbs
						43				0.33 ft/min
235										
236	predomately dark fine grained material (60%) washing through screen, includes biotite and mica, coarse portion (40%) contains quartz/feldspar/biotite/hornblende mixture					44			1235 / 1238	0.33 ft/min
240										
241									1253	
						45			1255	0.45 ft/min
245										
246									1315	
						46			1317	0.36 ft/min
250										
251									1331	
						47			1336	0.42 ft/min

Tracking Codes: C:\DOCUMENTS AND SETTINGS\LARSENE1\MY DOCUMENTS\PROJECTS\SITE POMPI\AND\LUA\LUA\LEI.GPJ 4/4/10, 15:05

Form: 2C BLANK LOG

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominently fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesonless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Soil Boring Log (Continued)

Sheet 14 of 16

Project Name: NLKE PR-79	Site: AOC-1	Hole ID: AR79-BR-001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										air pressure - 125 psi down pressure - 100 lbs
	SAA					47				
35										
256								1348		
						48		1356		0.45 ft/min
40										
261								1407		
						49		1418		0.33 ft/min
45										
266								1433		
						50		1436		0.33 ft/min
50										
271								1451		
						51		1456		

Tracking Codes: C:\DOCUMENTS AND SETTINGS\LARSENE1\MY DOCUMENTS\PROJECTS\NLKE PONPLAN\ONLUALUALEI.GPJ, 4/8/10, 15:05

Form 10 BLANK LOG

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements; Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Soil Boring Log (Continued)

Sheet ~~3 of 3~~ 15 16

Project Name:	Site:	Hole ID: PR 79-SR-007

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
35	SAA					S1		1508		5ft/12 min
40						S2		1511 / 1525		14 min/5ft
45						S3		1532 / 1547		15 min/5ft
50	5/20/2020 5/21/2020 SAA, quartz, plagioclase, biotite/hornblende. 35-40% dark gray to black, 60-65% - lt. gray/white less fines than previously					S4		0918 / 0930		0.41
	more light colored mineral grains (quartz and feldspar plagioclase) 70% light colored less fines					S5		0937		0.45

276 281 286 291

Tracking Codes: C:\DOCUMENTS AND SETTINGS\LARSCHE1\MY DOCUMENTS\PROJECT\SMRE POMP\LWO\LULU\LULE.GPJ, 4/8/10, 15:06

USCS Name, Consistency/Density (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominently coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). Moisture, (dry, moist, wet). Color. Gradation (relative percentages of soil components). Plasticity/Cohesiveness (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominently coarse: cohesionless, slightly cohesive, cohesive). Stratification/Structure (blocky, massive, lensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). Cementation (none, weak, moderate, strong). Other descriptive elements: Geologic Origin
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Soil Boring Log (Continued)

Sheet ~~3 of 3~~ 16 16

Project Name: MIKE PR-79	Site: AOC-1	Hole ID: PR79-BR001

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
										Air pressure - 125 psi Down pressure - 100 lbs
						57				0.45
35										
296								0948		
						58		0951		4 lb/11 min
300 40	End of BORING @ 1002 Boring was blown out as much as possible 5/21/20 @ 1015 Developed 6/15 to 6/17/2020							1002		
45										
50										

Tracking Codes: C:\DOCUMENTS AND SETTINGS\LARSENE1\MY DOCUMENTS\PROJECTS\MIKE POMPLIANO\LUALUALEI.GPJ, 4/6/10, 16:05

Form: 10.01.MK1.00

USCS Name, **Consistency/Density** (predominantly fine: very soft (n=0-1), soft (n=2-4), medium stiff (n=5-8), stiff (n=9-15), very stiff (n=16-30), hard (n=31+)/predominantly coarse: very loose (n=0-4), loose (n=5-10), medium dense (n=11-30), dense (n=31-50), very dense (n=51+)). **Moisture**, (dry, moist, wet). **Color**, **Gradation** (relative percentages of soil components). **Plasticity/Cohesiveness** (predominantly fine: nonplastic, slightly plastic, low plasticity, medium plasticity, high plasticity)/predominantly coarse: cohesionless, slightly cohesive, cohesive). **Stratification/Structure** (blocky, massive, tensed, etc) (contacts: sharp, gradational) (bedding: horizontal, inclined). **Cementation** (none, weak, moderate, strong). **Other descriptive elements; Geologic Origin**
S# = Sample Number, SD = Sample Depth, ST = Sample Time, A = Analysis.
BZ = Breathing Zone, BG = Background, BH = Borehole, CB = Cuttings Bin

AECOM

Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: AOC - 1	**Hole ID:** PR79-BR-002
Project Number: 60608703	*Northing:* See Field Report for data	Total Depth (feet): 300 ft
Drilling Contractor: Glacier Drilling	*Easting:* See Field Report for data	Date / Time Started: 05-22-2020 1330
Driller: A. Augustine	Elevation (feet MSL): *Ground:* See field Report	Date / Time Finished: 05-28-2020 1010
Drilling Equipment: CME - 85	▼ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 06-18-20
Drilling Method: Rotary Air Hammer	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 5"	Weather/Comments: variable	

6" casing down to 32'

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	Previously drilled on 05-04-2020 with Rotosonic drill rig to 32ft. 6" casing was installed 5ft into bedrock (27-32ft) and grouted in place to surface									applied air pressure: 125psi. downward pressure: 100 lbs
5										
10										
15										
20										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MIKE PR 79	Site: ADC-1	Hole ID: PR 79-BP-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
25										
30	0-32 ft previously drilled Bedrock at 27 ft, granodiorite, very strong white/gray 75%, black 25%, nonfoliated, massive, fresh, competent moderately fractured									
35	05-22-2020 Samples collected by strainer, some fine portion bypasses strainer Quartz 25%, feldspar 35%, biotite/hornblende/mica 40%					1		1345		10.31 ft/min
								1401		1
40	SAA					2		1403		
45										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK PS LOG

AECOM

Boring Log (Continued)

6060G103

Project Name: ~~Altus AFB SAR~~ MRE PR79	Site: ADC-1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	Biotite / Quartz / plagioclase ≈50% biotite ≈25 qtz ≈25 plagioclase. Fine grained black/gray through screening - possibly residual grout from within boring					3				
49	05-22-20									
50	05-25-20 fine grained black fragments predominate (60%) w/ quartz and plagioclase. Brown/[illegible] blende [illegible] in dark portion, some [illegible], trace [illegible] feldspar					4		0940		collapse at 49-50 ft cleared w/ roller bit
54								0956		
55	Amphibole? very fine grained black to dark gray (dark greenish gray 5GY 4/1)					5		0958		0.7 ft/min
59								1000		pause for footing
60						6		1017		7 min/5 ft = 0.7 ft/min
								1021		
65						7		1026		0.7 ft/min
								1033		
70						8		1036		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK MSL LEV1

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR29	Site: AOC-1	Hole ID: BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
						8		1036		0.625 ft/min
								1044		
75						9		1046		0.625 ft/min
								1054		
80	SAA tr a [illegible]					10		1152		0.55 ft/min bit plugged [illegible]
								1201		
85	less fines (unless [illegible] through), more consistent [illegible] diorite (quartz, plag [illegible] biotite, hornblende)					11		1203		0.625 ft/min
								1211		
90	[illegible] staining in sample obtained after hitting fracture, increased orthoclase, [illegible]					12		1214		fracture at 92-93 ft 0.625
	fracture 92-93 ft									
								1222		
95						13		1226		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR79 | Site: MDC-1 | Hole ID: PR79-BH-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					13		1226		0.71 ft/min
								1233		
100	SAA					14		1236		changing drills 0.28
								1254		
105	SAA					15		1256		0.55 ft/min
								1305		
110	SAA					16		1307		0.625 ft/min
								1315		
115	SAA					17		1317		0.625 ft/min
								1325		
120						18		1330		

Tracking Codes: 5/25/10, 17:18

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MIKEPR79	Site: ADC-1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					18		1330		0.625 ft/min
								1338		
125						19		1340		0.56 ft/min
								1349		
130						20		1351		0.56 ft/min
								1400		
135						21		1403		0.5 ft/min
								1413		
140						22		1416		0.45 ft/min
								1427		
145						23		1429		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: AOC-1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	increased fines, dark greenish gray, 5GY4/1, to medium gray.					23		1429		0.55 ft/min
								1438		
150	SAA					24		1440		0.625 ft/min
								1448		
155	SAA					25		1452		0.42 ft/min
								1504		
160	SAA					26		1506		0.5 ft/min
								1516		
	less fine material					27		1518		0.625 ft/min
165										
								1526		
170						28		1532		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Sheet 3 of 3

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: AX-1	Hole ID: PR79 BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
						28		1532		11 min = 0.45 ft/min
								1543		
175						29		1544		12 min 0.42 ft/min
	05-26 2020							1556		
180	05-27-2020 Granodiorite to amphibolite migmatite? dark greenish gray 5GY 4/1 50-60% light gray N7 40-50%, with 5-10% lights and darks grains Contains: biotite/hornblende 50%, quartz 20%, plagioclase 20%, trace muscovite					30		0900		0.25 ft min ↳ slow drilling as they set up
185	SAA					31		0920 0927		0.5 ft/min
								0937		
190						32		0939		0.55 ft/min
195						33		0948		

Tracking Code# 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log
(Continued)

Sheet 9 of 13

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: AOC-1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) at pressure - 125 psi down pressure 100 lbs
					34					
200	√dA				35			0954		0.38 ft/min 10 ft / 26 min
205										
210	√AA				36			1020 1023		0.34 ft/min 10 ft / 29 min
215										
220								1052 1054		

Tracking Codes: 5/25/10, 17:16

Form: ALTUS BLANK PS LOG

AECOM

Boring Log
(Continued)

Sheet 10 of 13

Project Name: ~~Altus AFB SAR~~ MIKE PR79	Site: ADC-1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					37		1054		0.29 ft/min 10 ft / 34 min
225										
230	SAA, more coarse grained / gravel					38		1128 1130		0.30 ft/min 10 ft / 33 min
235										
240						39		1203 1209		0.33 ft/min 10 ft / 30 min
245										

Tracking Codes: 5/25/10, 17 18

Form: ALTUS BLANK R1.00

AECOM

Boring Log (Continued)

Sheet 11 of 13

Project Name: ~~Altus AFB SAR~~ MIKE PA-79	Site: AOC 1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
										0.33 ft/min
								1239		
250	rAA					40		1243		10 ft / 33 min 0.30 ft/min
								1300		
255	mostly gray grains 65% to dark gray 35%, more closely resembles the granodiorite									
								1316		
260						41		1320		0.18 ft min 10 ft / 55 min 259-264 - 17 min 0.29 ft min
265										264-269 took majority of time 264-269 - 38 min 0.13 ft min
								1415		
270								1420		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Sheet 1 of 13

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: ADC-1	Hole ID: PR79 BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
						42		1420		plug in rods slowed drilling. plug was cleared and drilling resumed
275										10 ft/43 min 0.23 ft/min
								1503		
280						43		1506		
285										
	05-27-20							1549		
290	05-28-20 [illegible] 60-70% gray, lt gray matrix (quartz plag.) and 40-30% dark gray to black (brite/hornblende) Absence of fines may be bypassing [illegible]					44			0919	10 ft, 30 min 0.33 ft/min
295										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS HI AMR VOLUME

AECOM

Boring Log
(Continued)

Sheet 13 of 13

Project Name: ~~Altus AFB SAR~~ MKE PR79 BR-002	Site: AOC-1	Hole ID: PR79-BR-002

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									0249	
300									1010	
	END OF BORING @ 300ft. Hole was blown out by Sheron Air Hammer 05-28-20 Developed 06-17 to 06-18/20									
305										
310										
315										
320										

Tracking Codes: 5/25/10, 17:18

Form: ALTUSUBLANKERS.LOG

AECOM

Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: Rankas field (North)	**Hole ID:** PR79-BR-003
Project Number: 60608703	*Northing:* See Field Report for data	Total Depth (feet): 300.0 ft
Drilling Contractor: Glacier Drilling	*Easting:* See Field Report for data	Date / Time Started: 06-03-20 0900
Driller: A. Augustine	Elevation (feet MSL): *Ground:* See field Report	Date / Time Finished: 06-05-20 1350
Drilling Equipment: CME 850	▼ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 06-23-20 1349
Drilling Method: Rotary Air hammer	Logged By: J. Shown	Checked By: AKB
Borehole Diameter (inches): 5.0 inches	Weather/Comments: sunny and clear	

6.0" casing down to 15 ft

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	0-15' previously drilled, bedrock at 10.0 ft									applied air pressure: 125 psi downward pressure: 100 lbs
5										
	grout									
10										
15	06-03-20								0930	cyclone clogged
	fine grained pieces, angular, highly fractured, dark gray NB to greenish black SG 2/1, Fe staining + weathering, trace mica, lt gray					1			0955 1002 1013	0.45 ft/min
20										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK HS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MIKE PR79	Site: Rankas Field	Hole ID: BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi, down pressure - 100 lbs
									1013	
	Prostate rock is a granodiorite, angular pieces - fractured rock @24.6 major fracture @25-25.5 major fracture					2			1020 1028	0.625 ft/min
25										
						3			1031 1043	0.41 ft/min
30										
						4			1048 1058	0.5 ft/min
35										
	SAA borehole cuttings have dried up, less water in hole leads to more efficient air hammering - leads to rock dust, which gets through sample screening.					5			1101 1113	0.42 ft/min
40										
	granodiorite ≈ 40% quartz, 40% plagioclase, ~~" "~~ " " , 10% biotite, 10% hornblende					6			1115 1126	0.45 ft/min
45										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK BS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MIKE PR79	Site: Rookas Field	Hole ID: PR79-BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1126	
	SAA					7			1128	0.5 ft/min.
50										Coolant fan on compressor being repaired
									1138	
						8			1203	0.56 ft/min
55										
									1212	
						9			1214	0.625 ft/min
60										
									1222	
	SAA, trace of clay/silt					10			1227	0.55 ft/min
65										
									1236	
						11			1238	0.72 ft/min
									1245	
70										

Tracking Codes: 8/25/10 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR 79	Site: Roukas Field	Hole ID: PR79-BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1245	
	VAT					12			1247	0.71 ft/min
75									1254	
	increased % of alkali feldspar/ orthoclase at 20%, 20% plagioclase 40% quartz, 20% biotite					13			1256	0.71 ft/min
80									1303	
						14			1313	0.55 ft/min
85									1322	
	decreased orthoclase texture amount, grey diorite composition					15			1329	0.5 ft/min
90									1339	
						16			1341	0.625 ft/min
95									1349	

Tracking Codes: 5/25/10, 17:18

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MIKE PR-79	Site: Roukas Field	Hole ID: BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1349		
	SAA					17		1351		0.5 ft/min
100										
								1401		
						18		1405		0.55 ft/min
105										
								1414		
	increased feldspar + quartz 40% qtz, 40% feldspars, 20% biotite					19		1416		0.5 ft/min
110										
								1426		
	SAA					20		1430		0.56 ft/min
115										
								1439		
						21		1441		0.45 ft/min
120								14		

Tracking Codes: 5/25/10 17:18

Form: ALTUS BLANK BS LOG

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR79	Site: Roskos Field	Hole ID: PR-79-BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi drill pressure - 100 lbs
								1452		
	SAA					22		1455		0.38 ft/min
125										
								1508		
						23		1510		0.55 ft/min
130										
								1519		
						24		1521		0.50 ft/min
135										
								1531		
						25		1533		0.56 ft/min
140										
								1542		
						26		1545		0.5 ft/min
145										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK BR LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MIKE PR 79	Site: Roukas Field	Hole ID: PR79-BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	06-03-20							1555		
	~~06~~ 04-20 SAA, granodiorite, 35% [illegible], 45% plagioclase, 20% biotite, trace volcaclase					27		0920		0.56 ft/min
150										
						28		0929 / 0939		0.625 ft/min
155										
	SAA, slight weathering (ie [illegible]) observed, fine grained sediment, greenish gray 5G 6/1					29		0947 / 0949		0.625 ft/min
160										
						30		0957 / 1010		0.625 ft/min
165										
						31		1018 / 1021		0.56 ft/min
170										

Tracking Codes: 5/25/10, 17:18

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ MKE AR-79	Site: Roukas Field	Hole ID: PR79 BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1030		
	SAA					32		1039		0.33 ft/min
175								1048		
	increased water during drilling					33		1050		0.33 ft/min
180								1105		
						34		1125		clogged line to cyclone, cleaned
185								1144		
						35		1159		0.31 ft/min
190								1215		
						36		1221		0.31 ft/min
195										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK BS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79 | Site: Rooker Field | Hole ID: PR79-BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1237		
						37		1243		0.55 ft/min
200								1252		
	last ≈ 20 ft drill bit "jerking" according to driller - he thinks we may be on a vertical fracture no change in cuttings					38		1310		adding water to tank on RIG 0.33 ft/min
205								1325		
						39		1327		0.5 ft/min
210								1337		
						40		1340		clogged discharge line -drilling paused
215								1400		
	Drilling smoother, driller thinks we are off the vertical fracture					41		1410		0.22 ft/min
220										

Tracking Codes: 5/25/10, 17:16

Form: ALTUS BLANK BS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR79	Site: Rouken Farm	Hole ID: PR79 PR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1433		
	SAA, trace orthoclase/alkali feldspars					42		1438		0.30 ft/min
225								1955		
						43		1458		
230	06-04-20							1540		drilling paused discharge line clogged
	06-05-20 SAA					44		0900		0.38 ft/min
235								0913		
						45		0915		0.42 ft/min
240								0927		
						46		0930		0.21 ft/min
245										

Tracking Codes 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: Rocky Field	Hole ID: PR-79 BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					47			0954 0956	0.29 ft/min
250						48			1013 1017	0.5 ft/min
255						49		1027 1030		discharge line clogged, changing barrels drilling paused
260						50		1103 1110		0.26 ft/min
265						51		1129 1133		0.42 ft/min
270										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS PLANT 02.LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ Mike PR-79	Site: Rowlins Field	Hole ID: PR79 DR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1145		
	SAA					52		1150		0.18 ft/min
275										
								1228		
						53		1225		0.45 ft/min
280										
								1236		
						54		1238		0.28 ft/min
285										
								1256		
						55		1257		0.28 ft/min
290										
								1317		
						56		1324		0.42 ft/min
295										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK SCR1.DOC

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR 79	Site: Roukas Field	Hole ID: PR 79 BR-003

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1336		
	SAA					57		1338		
300								1349		
	Endcap Borehole @ 300 ft 06-05-2022 @ 1400 Borehole cleaned with air pressure. Developed 6/22 to 6/23/2020									
305										
310										
315										
320										

Tracking Codes: 6/25/10, 17:18

Form ALTUS BLANK R2100

AECOM

Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: ADC-2	**Hole ID:** PR79-BR-004
Project Number: 60608703	*Northing:* See Field Report for data	Total Depth (feet): 300.0 ft
Drilling Contractor: Glacier Drilling	*Easting:* See field Report for data	Date / Time Started: 05-29-20 1330
Driller: A. Augustine	Elevation (feet MSL): *Ground:* See field Report	Date / Time Finished: 06-02-20 1108
Drilling Equipment: CME-850	▼ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 06-25-20 1020
Drilling Method: Rotary Air Hammer	Logged By: John Stoman - AECOM	Checked By: AKB
Borehole Diameter (inches): 5.0	Weather/Comments:	

6.0" casing down to 15 ft.

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	0-15 ft logged previously as SB-111-BR-004 05-08-2020									applied air pressure: 125 psi. downward pressure: 100 lbs
5										Drill cuttings samples taken every 5 ft interval
10										
	0-15 logged previously									
15	Granite w/ granodiorite, predominately quartz and plagioclase (75%) with darker grains of biotite/hornblende/amphibole (25%)					1		1430		7 min/5 ft 0.71 ft/min
20										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BORR RB LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: AOC-2	Hole ID: PR-79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 psi
										0
21								1437		
						2		1440		10 min/5 ft 0.5 ft/min
	- fractured 2.4 w/water present									
25										
26								1450		
						3		1455		7 min/5 ft 0.71 ft/min
30										
								1507		
						4		1505		~~7 ft~~ 5 ft/7 min 0.71 ft/min
35										
								1512		
						5		1515		5 ft/5 min 1.0 ft/min
40										
								1520		
	SDA					6		1523		
45										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79	Site: ADC-2	Hole ID: BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1523		5ft / 6min
								1529		0.83 ft/min
46	SAA / trace orthoclase					7		1533		5ft / 6min
										0.83 ft/min
50										
								1539		
						8		1541		5ft / 6min
										0.83 ft/min
55										
	05-29-20							1547		
	05-01-20					9		0855		0.625 ft/min
60										
								0903		
						10		0905		1.0 ft/min
65										
								0910		
						11		0912		0.83 ft/min
70										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK RSI LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79	Site: AOC-2	Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								0918		
	SAA					12		0922		0.83 ft/min
75								0928		
						13		0930		1.0 ft/min
80								0935		
	Increased fine material, washed through screen. Coarse material SAA - granular fine fine are gray + dark gray					14		0940		1.0 ft/min
85								0945		
						15		0949		0.83 ft/min
90								0955		
						16		0958		0.71 ft/min
95										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MILE AR-79	Site: AOC-2	Hole ID: AR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1005		
	SAA, very dry hole, fine dust created, bypassing screening fine dust is light to dark gray					17		1007		0.83 ft/min
100								1013		
						18		1017		.83 ft/min
105								1023		
						19		1029		0.71 ft/min
110								1036		
						20		1039		0.83 ft/min
115								1045		
						21		1047		0.71 ft/min
120										

Tracking Codes: 5/25/10, 17:18

Form: AL-LUS-BLANK-MSL-LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79	Site: AAC-2	Hole ID: PR79-BR-304

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure – 125 psi down pressure – 100 lbs
								1054		
	SAA, fine gray (greenish gray 5G 6/1) w/flecks of black biotite (trace) coarse position quartz/plagioclase grain and black hornblende/amphibole grains.					22		1056		Δ in lithology – trace to 5% coarse, majority fine grained (silt to fine sand sized) particles gray to lt gray
125								1104		0.625 ft/min
	very fine grained greenish gray 5G 6/1 trace quartz (large grains).					23		1106		0.71 ft/min
130								1113		
						24		1118		0.71 ft/min
135								1125		
	light olive gray (5Y 6/1), very fine, trace black, trace med. sand (fine sand + silt size) very dry					25		1127		0.71 ft/min
140								1134		
						26		1136		0.55 ft/min
145										

Tracking Codes: 5/25/10, 17:18

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: ADC-2	Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1145	
	SAA, very fine rock dust, lt. gray, trace coarse grains of quartz & plag, biotite + mica					27			1150	0.625 ft/min
150									1158	
						28			1202	0.625 ft/min
155									1210	
						29			1211	0.56 ft/min
160									1218	
						30			1222	0.625 ft/min
165									1230	
						31			1232	0.625 ft/min
170										

Tracking Codes: 6/25/10, 17:18

Form: ALTUS ANN RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR 79	Site: AOC-2	Hole ID: PR79-BR-204

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) all pressure - 125 psi down pressure - 100 lbs
									1240	
	SAA					32			1242	0.625 ft/min
175									1250	
						33			1551	0.63 ft/min
180									1259	
						34			1303	0.56 ft/min
185									1312	
						35			1313	0.76 ft/min
190									1320	
						36			1323	0.56 ft/min
195										

Tracking Codes: 5/26/10, 17:18

Form: ALTUS-BR-SAR-MS11.DG

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: AOC-2	Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1332	
	SAA					37			1335	0.69 ft/min
200									1343	
						38			1347	0.71 ft/min
205									1354	
						39			1357	0.71 ft/min
210									1404	
						40			1408	0.5 ft/min
215									1416	
						41			1420	0.71 ft/min
220										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK BR LOG

AECOM

Boring Log (Continued)

Sheet 10 of 13

Project Name: ~~Altus AFD SAR~~ MKE PR 79	Site: NOC-2	Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
								1427		
	SAA					42		1431	113.	0.63 ft/min
225								1439		
						43		1442		0.56 ft/min
230								1451		
						44		1454		0.63 ft/min
235								1502		
						45		1506		0.63 ft/min
240								1514		
						46		1517		0.63 ft/min
245										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK DS LOG

AECOM

Boring Log (Continued)

Sheet 11 of 13

Project Name: ~~Altus AFB SAR~~ MIKE PR79	Site: AOC-2	Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1525	
	SAA					47			1530	0.63 ft/min
250										
	06-01-2020								1338	
	06-02-2020 Cuttings are wet today, due to water accumulating in the borehole overnight. Therefore, not as fine 15% black, 45% medium gray, 40% light gray. Quartz, plagioclase 40/40% 20% dark minerals - Biotite, hornblende, amphibole					48			0915	0.56 ft/min
255									0924	
						49			0929	0.63 ft/min
260									0937	
	Cutting dryer, more fine material, ≈5% coarse material remains after screening consistent w/ granodiorite bedrock					50			0941	0.63 ft/min
265									0949	
						51			0952	0.56 ft/min
270										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK BS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79 | Site: AOC-2 | Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1001	
275	dusky yellow green SGV 5/2 epidote grains (in coarse matrix in veins) 65%, 20% quartz/plag 15% black					52			1003 / 1012	0.56 ft/min
280	epidote 70-75%, majority granules (based on coarse grains)					53			1014 / 1023	0.56 ft/min
285	trace epidote, majority granules					54			1026 / 1034	0.63 ft/min
290	no epidote observed					55			1036 / 1045	0.56 ft/min
295	AA					56			1047	0.5 ft/min

Tracking Codes: 6/25/10, 17:18

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: AOC-2	Hole ID: PR79-BR-004

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
									1057	
	SAA					57			1059	0.56 ft/min
300									1100	
	END OF BORING @ 1100 900.0 ft 06-02-20 Development 06-19-20 to 06-22-20									
305										
310										
315										
320										

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK PS1.DO

AECOM

Boring Log

Project Name: Former NIKE PR-79 Control Area	Site: Rankin Property - Solar Farm	**Hole ID:** PR79-BR-005
Project Number: 60608703	*Northing:* See Field Report for data	Total Depth (feet): 300 ft
Drilling Contractor: Glacier Drilling	*Easting:* See Field Report for data	Date / Time Started: 06-08-20
Driller: A. Augustino	Elevation (feet MSL): *Ground:* See field Report	Date / Time Finished: 06-11-2020
Drilling Equipment: CME-850	▼ Water Depth During Drilling (feet bgs): NA	Date / Time Completed: 06-22-2020
Drilling Method: Rotary Air Hammer	Logged By: J. Shannon	Checked By: AKB
Borehole Diameter (inches): 5.0	Weather/Comments:	

6.0" Casing down to 17.0 ft

0-17 ft logged previously

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here)
	Sandy SILT		ML							applied air pressure: 125 psi
	gravelly SAND		SW							downward pressure: 100 lbs
	sandy SILT		ML							
	silty SAND		SM							Drill cuttings samples taken every 5 ft interval, through strainer
5	weathered bedrock w/silty SAND									
10										
15	Bedrock, granodiorite/amphibole, massive, very strong lt. gray + black, phaneritic, fresh, competent, slightly fractured vertical fractures, steeply dipping									05-13-20
	65% lt gray to white (quartz 35%, feldspar 30%) and black/dark gray (biotite, hornblende 35%) - Fe staining & weathering					1			1256 1259	06-08-20 17-20 ft
20										

Tracking Code: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79	Site: Rouskas Solar Farm	Hole ID: PR-79 BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	very dry cuttings					2		1302		0.83 ft/min
25								1308		
						3		1309		0.83 ft/min
30								1315		
	dry greenish gray fine cuttings 80%, w/ biotite/mica Coarse cuttings of gray black biotite schist, 50%, quartz 25, feldspar 25% slightly moist cuttings					4		1317		0.56 ft/min
35								1326		
	SAA - biotite schist - weathering (Fe staining) observed - large cuttings indicate possible fracture zone					5		1328		0.83 ft/min
40								1334		
	Fracture zone					6		1336		0.83 ft/min
45								1342		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS FRANK BS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79	Site: Roukas Solar Farm	Hole ID: PR-79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					7		1342		0.83 ft/min
50						8		1348 1350		0.83 ft/min
55	Fe "rust" staining, coarse cuttings, wet.					9		1356 1358		0.83 ft/min
60	Cuttings more consistent w/ granodiorite w/ 40% quartz / 40% feldspar / 20% biotite trace Fe staining					10		1404 1407		0.63 ft/min
65						11		1415 1417		0.71 ft/min
70								1424		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS PLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79	Site: Rowskas Solar Farm	Hole ID: PR-79-DR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA, 'rust' staining					12		1428		0.5 ft/min
75								1338		
						13		1440		0.83 ft/min
80								1446		
						14		1453		0.46 ft/min
85								1504		
	SAA, larger cuttings indicating possible fracture zone according to driller					15		1506		0.50 ft/min
90								1516		
						16		1518		0.45 ft/min
95								1529		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR-79	Site: Roukas Solar Farm	Hole ID: PR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	Migmatite mix of granodiorite and biotite schist trace orthoclase, trace pyrite					17		1531		0.26 ft/min
100	06-08-20							1550		
	06-09-20 SAA,					18		0905		0.50 ft/min
105								0915		
						19		0920		0.38 ft/min
110	increased % of quartz 40% quartz, 35% feldspar, 25% biotite					20		0923 0935		0.50 ft/min
115								0945		
						21		0947		0.50 ft/min
120								0957		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS FB AMK PS LOG

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR-79 | Site: Rosken Solar Farm | Hole ID: PR79-PR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					22		1000		0.50 ft/min
125								1010		
						23		1015		0.36 ft/min
130								1029		
	increased bentonite 50%, quartz 25%, feldspar 25%					24		1032		0.50 ft/min
135								1042		
						25		1045		0.42 ft/min
140								1057		
						26		1102		0.42 ft/min
145								1114		

Tracking Codes: 5/25/10, 17:19

Form: ALTUS BLANK BS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: Roukas Solar Farm	Hole ID: PR79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi, down pressure - 100 lbs
	SAA					27		1117		0.36 ft/min
150								1131		
						28		1133		0.38 ft/min
155								1146		
	Coarser cuttings, possible fracture zone					29		1150		0.38 ft/min
160								1203		clogged cyclone
						30		1215		0.45 ft/min
165								1226		
						31		1228		0.5 ft/min
170								1238		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR79 | Site: Rockville Solar Farm | Hole ID: PR79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					32		1245		0.42 ft/min
175								1257		
						33		1300		0.36 ft/min
180								1314		
						34		1317		0.28 ft/min
185								1335		
	trace pyrite					35		1337		0.38 ft/min
190								1350		
						36		1356		0.38 ft/min
	@192 small fracture zone									
195								1407		

Tracking Codes: 5/25/10, 17:18

AECOM

Boring Log (Continued)

Project Name: ~~Altus APB SAR~~ MKE PR79	Site: Roskas Solar Farm	Hole ID: PR79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					37		1409		0.33
										paused for fueling
200								1424		
						38		1432		clogged discharge line
205								1510		
						39		1513		clogged discharge line
210	06-09-20							1540		
	06-10-20 quartz 40% feldspar 40% biotite/hornblende 20% trace pyrite, epidote					40		0902		0.45 ft/min
215								0913		
	SAA					41		0915		0.21 ft/min
220								0939		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS SR APB HOLLEY

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: Roukas Solar Farm	Hole ID: PR79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					42		0942		0.38 ft/min
225						43		0955 1000		cracked ring in drill bit observed after rods were removed from borehole
230	06-10-20							1017		
	06-11-20 Diorite relict, large coarse pieces 60% biotite, 20% quartz; 20% feldspar trace pyrite, mica					44		0954		0.38 ft/min
235								1007		
	SAA					45		1009		0.56 ft/min
240								1018		
						46		1021		0.56 ft/min
245								1030		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log (Continued)

Project Name: ~~Altus AFB SAR~~ NIKE PR79	Site: Roukas Solar Farm	Hole ID: PR79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA					47		1033		0.56 ft/min
250						48		1042 1048		0.56 ft/min
255						49		1057 1059		0.56 ft/min
260	predom - quartz 50%, feldspar, 30% biotite 20%					50		1108 1110		0.31 ft/min
265	SAA					51		1126 1128		0.50 ft/min
270								1138		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK PS LOG

AECOM

Boring Log (Continued)

Sheet 12 of 13

Project Name: ~~Altus AFB SAR~~ MIKE PR79	Site: Roukas Solar Farm	Hole ID: PR79-BR-005

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air pressure - 125 psi down pressure - 100 lbs
	SAA, [illegible] with granulite previously encountered					52		1142		0.45 ft/min
275								1153		
	SAA					53		1156		0.42 ft/min
280								1200		
						54		1211		0.36 ft/min
285								1225		
						55		1227		0.42 ft/min
290								1239		
						56		1242		0.33 ft/min
295								1257		

Tracking Codes: 5/25/10, 17:18

Form: ALTUS BLANK RS LOG

AECOM

Boring Log
(Continued)

Project Name: ~~Altus AFB SAR~~ MKE PR79	Site: Rockas Solar Farm	Hole ID: PR79-BR-205

Depth (feet)	USCS Description	Log: Graphic	Log: USCS or Rock Type	Samples: Attempted Recovered	Samples: Method	Samples: Run Number	Samples: PID/FID (ppm)	Samples: Time	Well Diagram	Remarks (list sample numbers here) air press - 125 psi down press - 100 lbs
						57		1351		0.26 ft/min
300	END OF BORING @ 300 ft @ 1320 06/11/2020 Developed 06-19-20 to 06-22-2020							1320		
305										
310										
315										
320										

Tracking Code: 5/25/10, 17:18

Form: ALTUS FRANK PSLOG

Well Construction Logs

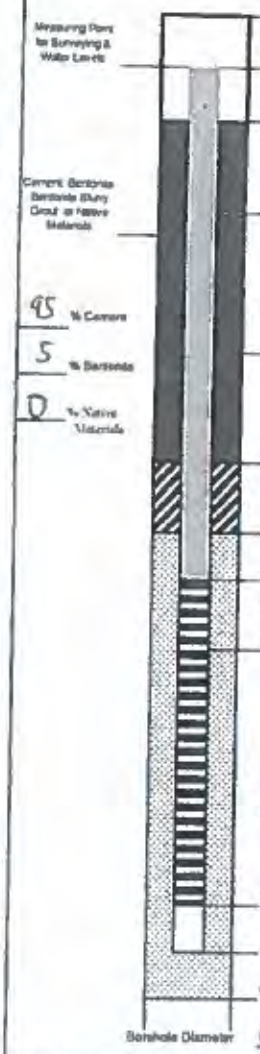
AECOM

Attachment 1
Monitoring Well Construction Form

PR79-SB-101/PR79-MW-001

Client: US Army Corps of Engineers	WELL ID: MW-001
Project Number: 60608703	Date installed: 05-05-2020
Site Location: MKE PR-79, Fort Ord, CA	Inspector: J. Shaman - AECOM
Well Location: ADC-1 Coords:	Contractor: Glacier Drilling
Method: Rotasonic	

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum ____
Top of Steel Guard Pipe		2.41	
Top of Riser Pipe		2.32	See Field
Ground Surface (G.S.)		0.0	Report for
Riser Pipe			elevation
Length	22.92 ft		data
Inside Diameter (ID)	2.0 in		
Type of Material	PVC		
Bottom of Steel Guard Pipe			
Top of Bentonite		16.0	
Bentonite Seal Thickness	2.0 ft		
Top of Sand		18.0	
Top of Screen		20.6	
▼ Stabilized Water Level		4.92 5/15/20	
Screen			
Length	10 ft.		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	14 ft		
Bottom of Screen		30.6	
Bottom of Tail Pipe		30.8	
Length	0.2 ft		
Bottom of Borehole		32.0	

Approved: [signature] Signature — Date: 3/19/21

Describe Measuring Point: top of casing, blackmark

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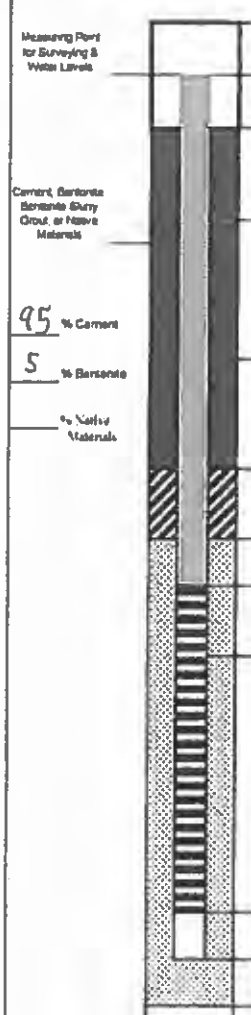
Attachment 1
Monitoring Well Construction Form

PR79-SB-103/PR79-MW-002

Client: US Army Corp of Engineers	WELL ID: MW-002
Project Number: 60608703	
Site Location: Former NIKE PR79 Control Area, Foster, RI	Date installed 05-05-2020
Well Location: AOC-1 Coords.	Inspector J. Shannon - AECOM
Method Rotosonic	Contractor Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.15	See Field
Top of Riser Pipe		1.92	Report
Ground Surface (G.S.)		00	elevation
			data
Riser Pipe. Length	18.92		
Inside Diameter (ID)	2.0 in		
Type of Material	PVC		
Bottom of Steel Guard Pipe			
Top of Bentonite		13.0	
Bentonite Seal Thickness	2.0 ft		
Top of Sand		15.0	
Top of Screen		17.0	
Stabilized Water Level		2.58	5/15/20
Screen. Length	10.0 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	13.0 ft		
Bottom of Screen		27.0	
Bottom of Tail Pipe		27.2	
Length	0.2 in		
Bottom of Borehole		28.0	

Measuring Point for Surveying & Water Levels

Cement, Bentonite Bentonite Slurry Grout, or Native Materials

95 % Cement

5 % Bentonite

% Native Materials

Borehole Diameter 6.0 in

Approved Signature

3/19/21 Date

Describe Measuring Point: top of casing, black mark

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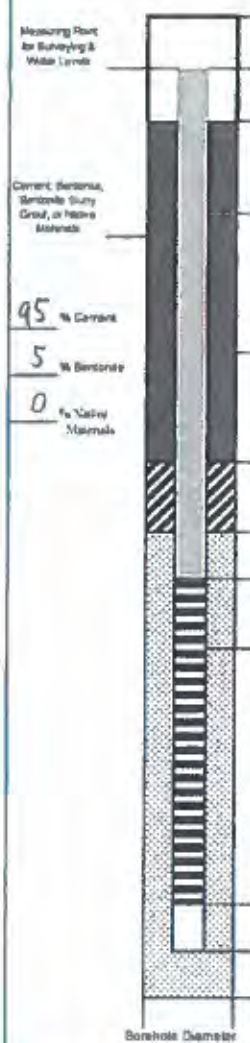
Attachment 1
Monitoring Well Construction Form

PR79-SB-104/PR79-MW-003

Client: U.S. Army Corp of Engineers	WELL ID: MW-003
Project Number: 60608703	
Site Location: MRE PR79, FUS-10, R1	Date Installed: 05-01-2020
Well Location: AOC-1 Coords	Inspector: J. Shannon-AECOM
Method: Rotosonic	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		3.10	See Field
Top of Riser Pipe		2.73	Report for
Ground Surface (G.S.)		00	elevation
			data
Riser Pipe: Length	25.73		
Inside Diameter (ID)	2.0 in		
Type of Material	PVC sch 40		
Bottom of Steel Guard Pipe			
Top of Bentonite		18 AKB 3/19	
Bentonite Seal Thickness	2.0 ft Bentonite chips		
Top of Sand		~~21~~ 22 AKB 3/19	
Top of Screen		23	
Stabilized Water Level		7.27 5/15/20	
Screen Length	10.0 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	13.0 ft		
Bottom of Screen		33	
Bottom of Tail Pipe Length	3.0 in	33.25	
Bottom of Borehole		35.0	

Measuring Point for Surveying & Water Levels

Cement, Bentonite, Bentonite Slurry Grout, or Native Materials

95 % Cement

5 % Bentonite

0 % Native Materials

Borehole Diameter 6.0 in

Describe Measuring Point: top of casing, black mark

Approved: Signature

3/19/21 Date

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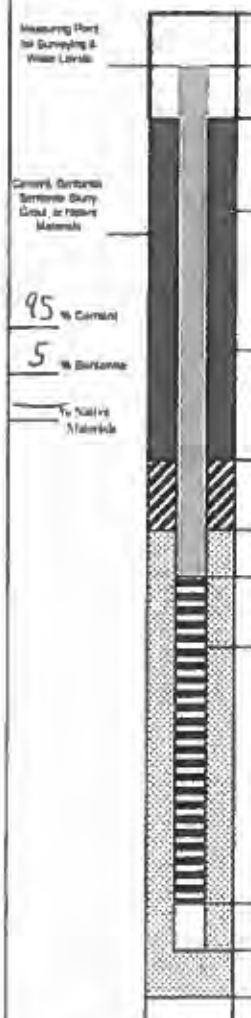
Attachment 1
Monitoring Well Construction Form PRTA-SB 106/PRTA-MW-004

Client: US Army Corps of Engineers	WELL ID: MW-004
Project Number: 60608703	
Site Location: MRE PRTA, Fort H. NY	Date Installed: 05-05-2020
Well Location: AOC-1 Cavers	Inspector: J. Shannon
Method: Rotosonic	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.60	See field
Top of Riser Pipe		1.85	Report for
Ground Surface (G.S.)		0.0	elevation
			data
Riser Pipe Length	5.85 ft		
Inside Diameter (ID)	2.0 in		
Type of Material	PVC		
Bottom of Steel Guard Pipe			
Top of Bentonite		1.0	
Bentonite Seal Thickness	2.0 ft		
Top of Sand		3.0	
Top of Screen		4.0	
▽ Stabilized Water Level		7.09 5/15/20	
Screen Length	10.0 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	12 ft		
Bottom of Screen		14.0	
Bottom of Tail Pipe Length	0.2 in	14.2	
Bottom of Borehole		15.0	

Approved: Andrew Bank
Signature

3/19/21
Date

Describe Measuring Point: top of casing, black mark

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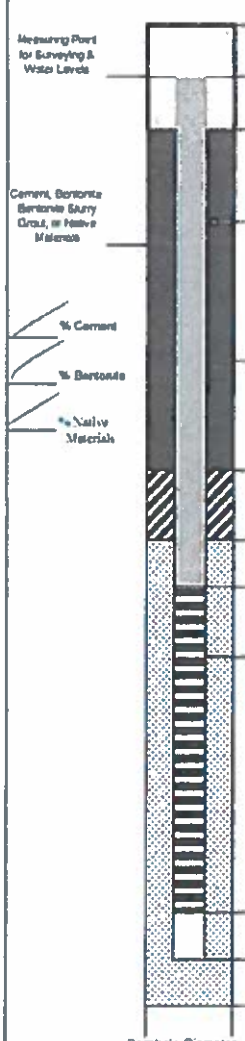
Attachment 1
Monitoring Well Construction Form

PR79-SB-109/MW-005

Client: US Army Corp of Engineers	WELL ID: MW-005
Project Number: 60608703	
Site Location: MKE PR79, Foster, RI	Date installed: 05-06-20
Well Location: AOC-2 Coords:	Inspector: J. Shaun - AECOM
Method: Rotosonic	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.43	See Field
Top of Riser Pipe		2.02	Report for
Ground Surface (G.S.)		0.0	elevation
			data
Riser Pipe: Length	4.02 ft		
Inside Diameter (ID)	2.0 in		
Type of Material	PVC		
Bottom of Steel Guard Pipe		0.5' sand #2	
Top of Bentonite		0.5	
Bentonite Seal Thickness	1.0 ft		
Top of Sand		1.5	
Top of Screen		2.0	
Stabilized Water Level		5.76 5/15/20	
Screen: Length	8.8 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	10.5 ft		
Bottom of Screen		10.8	
Bottom of Tail Pipe		11.0	
Length	2.0 in		
Bottom of Borehole		12.0	
Borehole Diameter	6.0 in		

Describe Measuring Point: top of casing, black mark

Approved: Anthony Bah
Signature

3/19/21
Date

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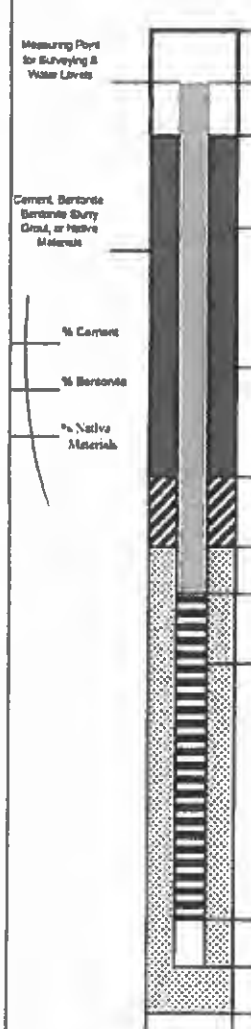
AECOM

Attachment 1
Monitoring Well Construction Form

PR79-MW-006s

Client: US Army Corp of Engineers	WELL ID: MW-006s
Project Number: 60608703	
Site Location: NIKE PR79, Foster, RI	Date installed: 05-07-20
Well Location: AOC 3 Coords.	Inspector: J. Shanlin - AECOM
Method: Rotosonic	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		1.58	See Field
Top of Riser Pipe		1.21	Report for
Ground Surface (G.S.)		00	elevation
			data
Riser Pipe: Length	3.21 ft		
Inside Diameter (ID)	2.0 in		
Type of Material	PVC		
Bottom of Steel Guard Pipe		0.5 #2 sand	
Top of Bentonite		0.5	
Bentonite Seal Thickness	1.0		
Top of Sand		1.5	
Top of Screen		2.0	
▼ Stabilized Water Level		4.31 5/15/20	
Screen: Length	9.0 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	13.5		
Bottom of Screen		11.0	
Bottom of Tail Pipe: Length	0.2	11.2	
Bottom of Borehole		15.0 ft	

Borehole Diameter: 6.0 in

Approved: Andrew Bock
Signature

3/19/21
Date

Describe Measuring Point: top of casing

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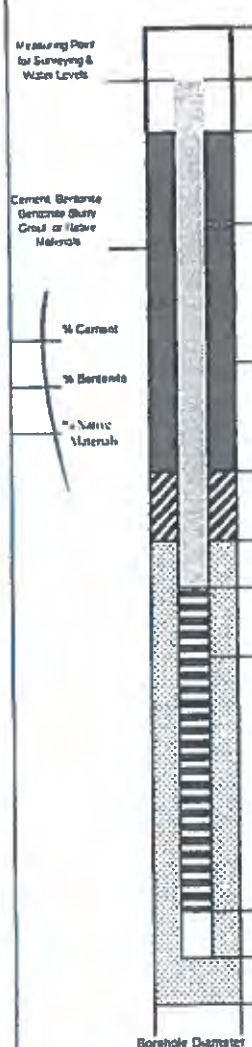
AECOM

Attachment 1
Monitoring Well Construction Form

PR79-SB-114/MW-007

Client: U.S. Army Corp of Engineers	WELL ID: MW-007
Project Number: 60608703	
Site Location: MIKE PR79, Fowler, RI	Date installed: 05-08-2020
Well Location: AOC-3 Coords:	Inspector: J. Shannon
Method: Rotosonic	Contractor:

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.05	See field
Top of Riser Pipe		1.28	Report for
Ground Surface (G.S.)		0.0	elevation
			data
Riser Pipe			
Length	3.28		
Inside Diameter (ID)	2.0		
Type of Material	PVC		
Bottom of Steel Guard Pipe		0.5 #2 sand	
Top of Bentonite		0.5	
Bentonite Seal Thickness	1.0 ft		
Top of Sand		1.5	
Top of Screen		2.0	
Stabilized Water Level		7.48 5/15/20	
Screen			
Length	8.0 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	9.5 ft		
Bottom of Screen		10.0	
Bottom of Tail Pipe		10.2	
Length	0.2 ft		
Bottom of Borehole		11.0	

Borehole Diameter: 6.0 in

Approved: Andrew Bach
Signature

3/19/21
Date

Describe Measuring Point: top of casing

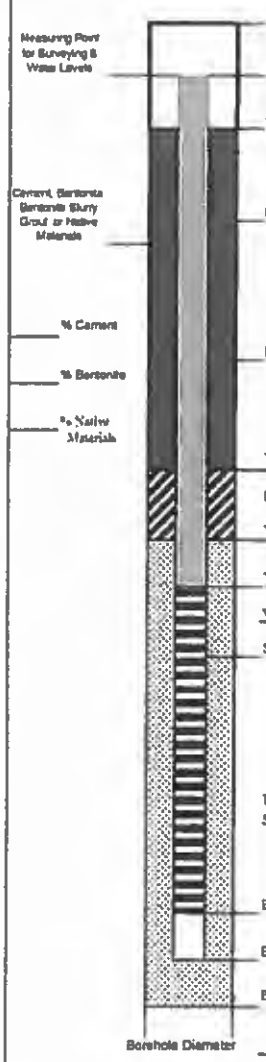
AECOM

Attachment 1
Monitoring Well Construction Form

PR79-SB-118-MW-008

Client: US Army Corp of Engineers	WELL ID: MW-008
Project Number: 60608703	
Site Location: NIKE PR79, Foster, RI 02857	Date installed: 05-11-20
Well Location: ADC-4 Coords.	Inspector: J. Shannon-AECOM
Method: Rotorone	Contractor:

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.00	See Field
Top of Riser Pipe		1.80	Report for
Ground Surface (G.S.)		00	elevation
			data
Riser Pipe: Length			
Inside Diameter (ID)	2.0 in		
Type of Material	PVC		
Bottom of Steel Guard Pipe		bentonite chips	
Top of Bentonite		1.0	
Bentonite Seal Thickness	2.0 ft		
Top of Sand		3.0	
Top of Screen		4.0	
Stabilized Water Level		dry 5/15/20	
Screen Length	10.0 ft		
Inside Diameter (ID)	2.0 in		
Slot Size	0.010		
Type of Material	PVC		
Type/Size of sand	#2		
Sand Pack Thickness	12.0 ft		
Bottom of Screen		14.0	
Bottom of Tail Pipe		14.2	
Length	0.2		
Bottom of Borehole		15.0	

Borehole Diameter 6.0

Approved: Andrew Bonh
Signature

3/19/21
Date

Describe Measuring Point: top of casing

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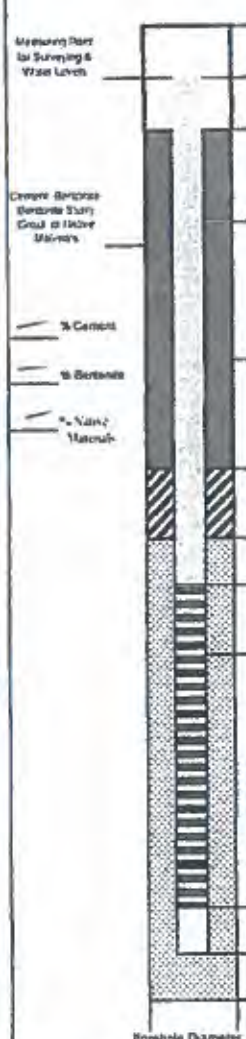
AECOM

Attachment 1
Monitoring Well Construction Form

Client: USACE	WELL ID: BR-001
Project Number: 60608703	
Site Location: NIKE PR79, FOSTER, RI 02857	Date installed: 05-21-20
Well Location: AOC-1 Coords:	Inspector: J. Shamn - AECOM
Method: Rotary Air Hammer	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.9	
Top of Riser Pipe		—	See field
Ground Surface (G.S.)		0.0	Report for elevation data
Riser Pipe			
Length	—		
Inside Diameter (ID)	—		
Type of Material	—		
Bottom of Inch Guard Pipe			
Top of Bentonite		—	
Bentonite Seal Thickness	—		
Top of Sand		—	
Top of Screen		—	
▼ Stabilized Water Level		17.04	
Screen:			
Length	—		
Inside Diameter (ID)	—		
Slot Size	—		
Type of Material	—		
Type/Size of sand	—		
Sand Pack Thickness	—		
Bottom of Screen		—	
Bottom of Tail Pipe:		—	
Length	—		
Bottom of Borehole		300.0	

Measuring Point for Surveying & Water Levels

Cement Bentonite Bentonite Slurry Grout or Native Materials

— % Cement

— % Bentonite

— % Native Materials

6" steel casing down to 15 ft bgs

Borehole Diameter 5.0"

Approved: [signature] Signature

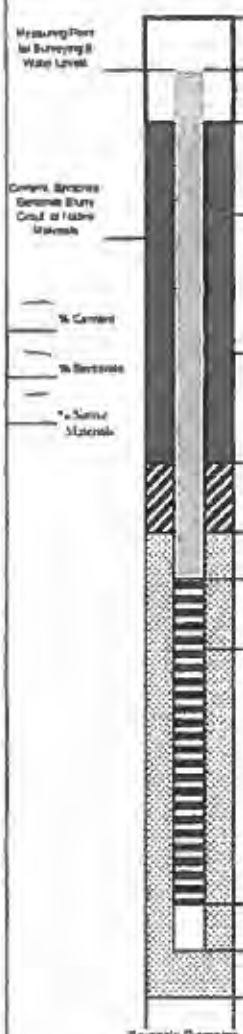
3/19/21 Date

Describe Measuring Point: Top of casing

Attachment 1
Monitoring Well Construction Form

Client: USACE	WELL ID: BR-002
Project Number: 60608703	
Site Location: NIKE PR-79, Foster, RI 02857	Date installed: 05-28-2020
Well Location: AOC-1 Coords.	Inspector: T. Shannon - AECOM
Method: Rotary Air Hammer	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



	Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe	3.0	See Field
Top of Riser Pipe	—	Report for
Ground Surface (G.S.)	0.0	Elevation data
Riser Pipe — Length — Inside Diameter (ID) — Type of Material —	6" steel casing down to 32ft bgs	
Bottom of Steel Guard Pipe		
Top of Bentonite	—	
Bentonite Seal Thickness —		
Top of Sand	—	
Top of Screen	—	
▼ Stabilized Water Level	18.76	
Screen — Length — Inside Diameter (ID) — Slot Size — Type of Material —		
Type/Size of sand — Sand Pack Thickness —		
Bottom of Screen	—	
Bottom of Tail Pipe	—	
Length — Bottom of Borehole	300.0	

Borehole Diameter 5.0"

Approved: [signature] Signature — Date: 3/19/21

Describe Measuring Point: Top of casing

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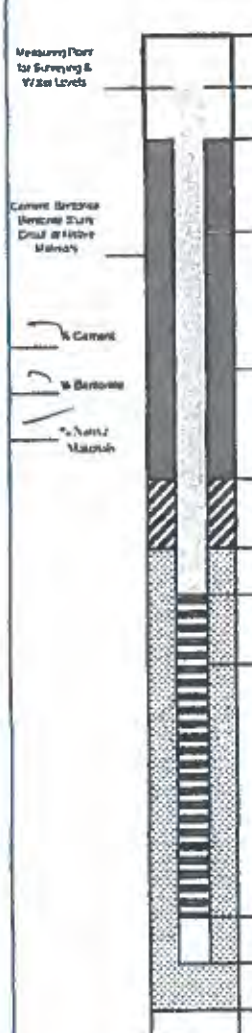
AECOM

Attachment 1
Monitoring Well Construction Form

Client: USACE	WELL ID: BR-003
Project Number: 60608703	
Site Location: MIKE PR79 Foster, RI 02857	Date installed: 06-05-2020
Well Location: Rosskas Field Coords:	Inspector: J. Shannon - AECOM
Method: Rotary Air Hammer	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		3.06	See Field Report for elevation data
Top of Riser Pipe		—	
Ground Surface (G.S.)		0.0	
Riser Pipe: Length	—	6" steel casing down to 15 ft bgs	
Inside Diameter (ID)	—		
Type of Material	—		
Bottom of Steel Guard Pipe			
Top of Bentonite		—	
Bentonite Seal Thickness	—		
Top of Sand		—	
Top of Screen		—	
▼ Stabilized Water Level		12.26	
Screen: Length	—		
Inside Diameter (ID)	—		
Slot Size	—		
Type of Material	—		
Type/Size of sand	—		
Sand Pack Thickness	—		
Bottom of Screen		—	
Bottom of Tail Pipe: Length	—	—	
Bottom of Borehole		300 ft	

Borehole Diameter 5.0"

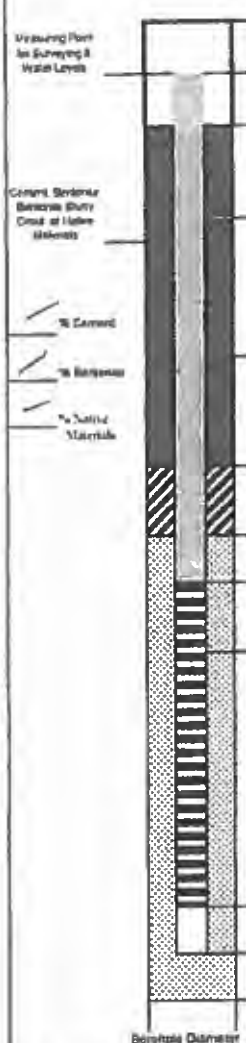
Approved: [signature] Signature — Date: 3/19/21

Describe Measuring Point: Top of casing

Attachment 1
Monitoring Well Construction Form

Client: USACE	WELL ID: PR-004
Project Number: 60608703	
Site Location: NIKE PR79 Foster, RI	Date installed: 06-02-20
Well Location: ADC-2 Coords:	Inspector: J. Shannon - AECOM
Method: Rotary Air Hammer	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		3.0 ft	See Field
Top of Riser Pipe		—	Report for
Ground Surface (G.S.)		0.0	elevation
			data
Riser Pipe			
Length	—	6" steel casing	
Inside Diameter (ID)	—	down to 15 ft bgs	
Type of Material	—		
Bottom of Steel Guard Pipe			
Top of Bentonite		—	
Bentonite Seal Thickness	—		
Top of Sand		—	
Top of Screen		—	
Stabilized Water Level		9.45	
Screen			
Length	—		
Inside Diameter (ID)	—		
Slot Size	—		
Type of Material	—		
Type/Size of sand	—		
Sand Pack Thickness	—		
Bottom of Screen		—	
Bottom of Tail Pipe		—	
Length	—		
Bottom of Borehole		300.0	

Borehole Diameter 5.0

Approved [signature] Signature

3/19/21 Date

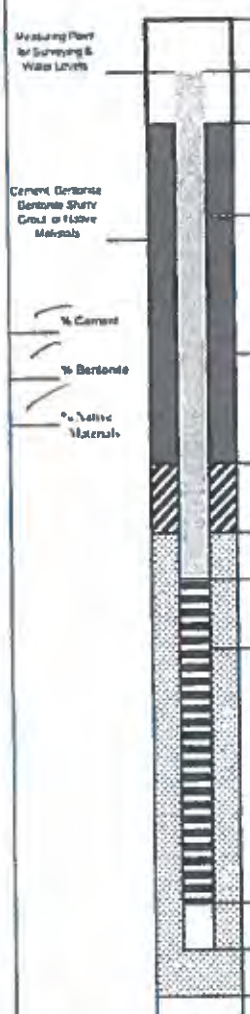
Descritive Measuring Point: Top of casing

AECOM

Attachment 1
Monitoring Well Construction Form

Client: USACE	WELL ID: BR-005
Project Number: 60608703	
Site Location: NIKE PR79, Foster, RI 02857	Date Installed: 06-11-20
Well Location: Rouskas Solar Farm Coords:	Inspector: J. Shamm - AECOM
Method: Rotary Air Hammer	Contractor: Glacier Drilling

MONITORING WELL CONSTRUCTION DETAIL



		Depth from G.S. (feet)	Elevation (feet) Datum
Top of Steel Guard Pipe		2.9	See Field
Top of Riser Pipe		—	Report for
Ground Surface (G.S.)		0.0	elevation
			data
Riser Pipe			
Length	—	6" steel casing	
Inside Diameter (ID)	—	down to 17 ft bgs	
Type of Material	—		
Bottom of Steel Guard Pipe			
Top of Bentonite		—	
Bentonite Seal Thickness	—	—	
Top of Sand		—	
Top of Screen		21.03	
▼ Stabilized Water Level			
Screen			
Length	—		
Inside Diameter (ID)	—		
Slot Size	—		
Type of Material	—		
Type/Size of sand	—		
Sand Pack Thickness	—		
Bottom of Screen		—	
Bottom of Tail Pipe		—	
Length	—		
Bottom of Borehole		30.0	

Borehole Diameter 5.0"

Approved [signature] Signature

3/19/21 Date

Describe Measuring Point: Top of casing

Appendix D

Well Development Logs

Well/Piezometer Development Record

Well ID: MW-001

Client: USACE

Project No: 60608793 Date: 06-09-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2.0" Material PVC

Measuring Point Description: Ground Surface

Geology at Screen Interval (if known): Till

Depth to Top of Screen (ft.): 20.6

Depth to Bottom of Screen (ft.): 30.6

Time of Water Level Measurement: 1320

Total Well Depth (ft.): 32.0

Calculate Purge Volume (gal.): ~~8.5~~ 6.98 AKB 3/22

Depth to Static Water Level (ft.): 12.78

Disposal Method: drum – Frac tank

Headspace:

Original Well Development ☑ Redevelopment ☐ Date of Original Development 06-09-20

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
1358	6		overrange, stay	–	–		pumped dry
1421	11		overrange, stay				pumped dry
1451	18		overrange, stay				" dry
1520	20		overrange, stay				" "
1536	25		overrange, stay				" "
1555	30		overrange, stay				" "
6/10/20 0835	32.5		overrange, stay				" "
0900	42.5		720, stay				pumped dry (3x) filters

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 255 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters ____% See QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

Pumped dry three times in succession and turbidity has decreased well is considered developed.

Signature: [signature] Date: 06/16/20

Well/Piezometer Development Record

Well ID: MW-001

Client: USACE

Project No: 60608709 Date: 06-9-20 Developer: Glacier Drilling

Site Location: MKE AR-79, Fosta, RI

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
0930	47.5	–	810	gray	–	–	dry
1000	52.5	–	overrange,	gray			dry
1130	62.5	480 ml/min	132,	clear/gray		–	–
1155	62.5	480 ml/min	124,	clear, gray,	6.98 pH,	18.51 °C,	Sp.C. 193

ORP - 114, DO: 8.53

Pumped dry more than three times in succession and the turbidity had decreased: well is considered developed.

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 25.5 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters — %Jar QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

Signature: [signature] Date: 6/10/20

Well/Piezometer Development Record

Well ID: MW-002

Client: USACE

Project No: 60608703 Date: 5-15-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2.0 in Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): Till

Depth to Top of Screen (ft.): 17.0

Depth to Bottom of Screen (ft.): 27.0

Time of Water Level Measurement: 1015

Total Well Depth (ft.): 28.0

Calculate Purge Volume (gal.): ~~8.34~~ 7.67 NOB 3/22

Depth to Static Water Level (ft.): 4.5

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development:

DEVELOPMENT METHOD: whale pump

PURGE METHOD: whale pump

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
5/15/20	1030	33.0	–	high	gray	–	–	dry
5/18/20	1300	46.0	–	776	gray	–	–	dry
6/1/20	0927	56.0	400 ml/min	107	lt. gray	8.43	11.8	SPC-703 ORP-246.2 DO-2.67
	1106	64.0	300 ml/min	121	lt. gray	8.14	11.59	SPC-119 ORP-49.8 DO-7.12
	1252	74.5	300 ml/min	91.8	lt. gray	7.78	10.72	SPC-172 ORP-80.5 DO-5.89 - dry

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 25 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters ____ % See QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☒	☐

If no or N/A explain below:

Purged dry three times in succession. and turbidity has decreased. Well is considered developed

Signature: [signature] Date: 06/09/20

Well/Piezometer Development Record

Well ID: MW-003

Client: USACE

Project No: 60608703 Date: 05-15-20 Developer: Glacier Drilling

Site Location: NIKE PR-79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): Glacial Till

Depth to Top of Screen (ft.): 23.0

Depth to Bottom of Screen (ft.): 33.0

Time of Water Level Measurement: 0915

Total Well Depth (ft.): 35.0

Calculate Purge Volume (gal.): ~~9.37~~ 7.91 AKB 3/22

Depth to Static Water Level (ft.): 10.0

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
1025	7.0		high/gray & silty		–	–	pumped dry
1100	9.0		high/gray & silty		–	–	pumped dry
1115	12.0		high, silty		–	–	pumped dry
1140	15.5		high, silty		–	–	pumped dry
1235	19.0		high, silty		–	–	pumped dry
1409	24.0		high, silty		–	–	pumped dry
1448	27.0		high, silty		–	–	pumped dry
1520	30.0		high, silty, lt. gray		–	–	pumped dry

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 28 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters @ APP %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

Pumped dry three times in succession, and turbidity decreasing well is considered developed.

Signature [signature] Date: 06/09/20

Well/Piezometer Development Record

Well ID: MW-003

Client: USACE

Project No: 60608703 Date: 05-15-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
	1555	33.0	—	700	lt. gray	—	—	pumped dry
5/18/20	1200	67.0		530	gray	—		pumped dry
6/9/20	0840	135.5		533	gray			pumped dry
	1444	178.5	300 ml/min,	130 NTU,	gray, 7.21, 11.86, SPC-128, ORP-94.5, DO-7.47			

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 28 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters See %QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below

Pumped dry three times in succession and turbidity decreasing. Well is considered developed.

Signature [signature] Date 06/09/20

Well/Piezometer Development Record

Well ID: MW-004

Client: USACE

Project No: 60608203 Date: 6-10-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2.00 Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): Silty SAND

Depth to Top of Screen (ft.): 4.0

Depth to Bottom of Screen (ft.): 14.0

Time of Water Level Measurement: 13.10

Total Well Depth (ft.): 15.0

Calculate Purge Volume (gal.): ~~2.3~~ 4.6 AKB 3/22

Depth to Static Water Level (ft.): 10.56

Disposal Method: dNM - fracture

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development:

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
06/10/20	1315	2.0		over range	gray	—	—	pumped dry
	1372	3.0		over range	gray	—	—	pumped dry
	1414	3.5		over range	gray	—	—	pumped dry
	1442	4.0		over range	gray	—	—	pumped dry
	1523	4.5		628	gray	—	—	pumped dry
6/11/20	0810	6.5		overrange	gray			pumped dry
	0902	8.5		overrange	gray			pumped dry
	1003	9.0		overrange	lt. gray			pumped dry

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 7.11 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters Per SOP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

Pumped dry three times in succession, and decreasing turbidity. Well is considered developed.

Signature: [signature] Date: 06/12/20

Well/Piezometer Development Record

Well ID: MW-204

Client: USACE

Project No: 60608703 Date: 6-10-20 Developer: Glacier Drilling

Site Location: NIKE PR-79, Foster, RI

	Time	Total Volume Purged (gal)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
6/11/20	1510	10.0		OUT range	lt. gray			pumped dry
6/12/20	0850	12.0	300 ml/min	22	lt. gray	6.12 pH	19.8°C	SPC = 110, ORP -273B, DO - 9.84

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required _____ gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below

Pumped dry three times in succession and decreasing turbidity, well is considered developed.

Signature [signature] Date 06/12/20

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: MW-005

Client: USACE

Project No: 60608703 Date: 6/12/20 Developer: Glocker Drilling

Site Location: Former Nike PR79 Control Area

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description: Ground Surface

Depth to Top of Screen (ft.): 2.0

Depth to Bottom of Screen (ft.): 10.8

Total Well Depth (ft.): 11.0

Depth to Static Water Level (ft.): 9.34

Geology at Screen Interval (if known): Silty SAND

Time of Water Level Measurement: 1245

Calculate Purge Volume (gal.): 1 volume = ~~1.35~~ 4.18 AKB 3/22

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development:

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
	1100	0.75	NM	—	brown-gray	—	—	Dry
6/15 DTW=9.70	0930	1.0	NA	over	brown - heavy silt			Dry. Used water + block (surged)
6/16 DTW=9.93	0922	1.1	NA	over	brown			Dry-surged
6/17 DTW=9.82	0910	1.25	NM	1000	brown	5.56	19.21	SPC: 161, DO: 6.18, ORP: 97.9 Dry-surged

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required _____ gallons
Maximum Turbidity Allowed _____ NTUs
Stabilization of parameters _____ %

	Yes	No	NA
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☐	☐	☑
Has parameters stabilized	☐	☐	☑

If no or NA explain below:
Surged and purged dry >3 times with lowering turbidity per SOP

Signature: [signature] Date: 6/17/20

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: MW-006S

Client: USACE

Project No: 60608703 Date: 6/11/20 Developer: Glover Drilling

Site Location: Former Nike PR79 Control Area

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description: Ground Surface

Depth to Top of Screen (ft.): 2.0

Depth to Bottom of Screen (ft.): 11.0

Total Well Depth (ft.): 15.0

Depth to Static Water Level (ft.): 4.31 (6/15/20); 7.14 (6/11/20)

Geology at Screen Interval (if known): silty SAND (2-3); GRAVEL w/sand (3-11)

Time of Water Level Measurement: 0820

water added during drilling = 50 gal

Calculate Purge Volume (gal): 1 volume = ~~4.15~~ gal 5.62 AKB 3/22

Disposal Method: drum-truck tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development:

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

Time	Total Volume Purged (gal)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
0835	2.0	–	–	dark gray	–	–	Dry
0855-0905	7.0	–	–	gray	–	–	Dry
0925-0955	50.0	~0.5 gpm	165	light gray	–	–	
1155-1400	100.0	~0.5	157	light gray	–	–	
1400-1550	150.0	~0.5	149	light gray	–	–	
6/12 0918	154	~0.5	334	light gray	5.77	15.11	SPC: 1550 DO: 7.97 ORP: 143.0
0926	158	~0.5	138	light gray	5.63	14.69	SPC: 1453 DO: 7.99 ORP: 149.5
0934	162	~0.5	133	light gray	5.64	14.61	SPC: 1374 DO: 7.43 ORP: 163.3
0942	166	~0.5	94.3	light gray	5.67	14.86	SPC: 1320 DO: 7.42 ORP: 163.6
0952	170	~0.5	110	light gray	5.55	14.92	1267 7.14 167.9

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required _____ gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____ %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Has parameters stabilized	☒	☐	☐

If no or N/A explain below

Turbidity within 10%. See back for more readings

Signature: [signature] Date: 6/12/20

Well/Piezometer Development Record

Well ID: MW-006S

Client: USACE

Project No: 60608703 Date: 6/11/20 Developer: Glacier Drilling

Site Location: NIKE PR-79, Foster, RI

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	SPC	DO	Other ORP
1002	174	~0.5	59.0	H. gray	5.54	14.86	1234	7.66	162.5
1011	178	~0.5	105.0	H. gray	5.49	14.98	1208	7.87	170.7
1019	182	0.5	56.8	H. gray	5.49	15.10	1185	7.52	170.6
1027	186	0.5	57.0	H. gray	5.47	14.92	1164	7.56	165.1
1035	190	0.5	56.2	H. gray	5.44	15.08	1154	7.11	165.8

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 12.5 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters Yes % Q App

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Has parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature _____ Date: _____

Well/Piezometer Development Record

Well ID: MW-007

Client: WACE

Project No: 60608703 Date: 05-15-20 Developer: Glacier Drilling

Site Location: MIKE AR79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description: Groundsurface

Depth to Top of Screen (ft.): 2.0

Depth to Bottom of Screen (ft.): 10.0

Total Well Depth (ft.): 11.0

Depth to Static Water Level (ft.): 7.48

Geology at Screen Interval (if known): well graded SAND

Time of Water Level Measurement: 12:00

Calculate Purge Volume (gal.): 0.57 gal

Disposal Method: Frac tank

Headspace: 0.0 ppm

Original Well Development ☒ Redevelopment ☐ Date of Original Development ____

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
5-15-20	1215	0.4	—	dark gray	—	—		run dry slow recharge
6-10.20	0800	0.3	—	dark gray	—	—		pumped dry
06-15-20	1015	0.2	—	dark gray	—	—		pumped dry, slow recharge.

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 1.71 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters See % QAPP

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

Pumped dry 3x, slow recharge.

Signature: [signature] Date: 06-15-20

Well/Piezometer Development Record

Well ID: MW-008

Client: USACE

Project No: 60608703 Date: 6-10-20 Developer: Glacier Drilling

Site Location: NIKE PR-79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): Silty SAND

Depth to Top of Screen (ft.): 4.0

Depth to Bottom of Screen (ft.): 14.2

Time of Water Level Measurement: 1300

Total Well Depth (ft.): 15.0

Calculate Purge Volume (gal.): —

Depth to Static Water Level (ft.): NA, dry

Disposal Method: drum - frac tank

Headspace: —

Original Well Development ☒ Redevelopment ☐ Date of Original Development: —

DEVELOPMENT METHOD whale pump

PURGE METHOD whale pump

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
1300	well is dry on all subsequent attempts to develope or sample						

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required ____ gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters ±10 % QAPP

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☐	☐	☒
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

Well is dry

Signature: [signature] Date: 06-15-20

Well/Piezometer Development Record

Well ID: BR-201

Client: USACE

Project No: 60608703 Date: 6-15-20 Developer: Glacier Drilling

Site Location: NIKE PR-79 Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 5.0 in Material NA

Measuring Point Description: ground

Depth to Top of Screen (ft.): NA

Depth to Bottom of Screen (ft.): NA

Total Well Depth (ft.): 300.0

Depth to Static Water Level (ft.): 18.6

Geology at Screen Interval (if known): Granodorite

Time of Water Level Measurement: 0800

Calculate Purge Volume (gal.): 295 281 AKB 3/22

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development:

DEVELOPMENT METHOD: Compressed air

PURGE METHOD: Compressed air

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
6/15/20	1045	150		425	lt. gray			—
	1230	350		800	gray			pumped dry
06/16/20	0905	400		214	lt. gray			—
	1030	500		482	gray			—
	1545	650		HIGH	dk gray			pumped dry
	1620	625		HIGH	dk. gray			pumped dry
06/17/20	0900	800		HIGH	dk gray			pumped dry
	0915	850		765	dk gray			pumped dry

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 873 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters see % @ APP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:
Pumped dry three times in succession and turbidity decreasing. Well is considered developed

Signature: [signature] Date: 06-17-20

Well/Piezometer Development Record

Well ID: BR-001

Client: USACE

Project No: 60608703 Date: 6-15-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	SPC	Other - ORP
06/17/20	1015	875	—	598	lt. gray				
	1045	900		313	gray	6.27	17.5	178	184
	1115	1025		218	lt. gray	6.02	16.5	200.1	182

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 875 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters ±10 % QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☒	☐

If no or N/A explain below:
Pumped dry three times in succession, and turbidity decreasing. Well is considered developed

Signature: [signature] Date: 06-17-20

Well/Piezometer Development Record

Well ID: BR-002

Client: USACE

Project No: 60608703 Date: 6-17-20 Developer: Glacier Drilling

Site Location: MKE PR-74, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 5.0 in Material NA

Measuring Point Description: ground surface

Depth to Top of Screen (ft.): NA

Depth to Bottom of Screen (ft.): NA

Total Well Depth (ft.): 300.0

Depth to Static Water Level (ft.): 18.8

Geology at Screen Interval (if known): Granodiorite / Fractured bedrock

Time of Water Level Measurement: 1200

Calculate Purge Volume (gal.): ~~287~~ 281 AMB 3/22

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD: Compressed air

PURGE METHOD: Compressed air

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	SPC	Other ORP	
06-17-20	1345	150		high	dk gray					
	1500	300		high	gray					pumped dry, high sediment content
	1530	325		high	dk gray					
	1600	350		high	dk gray					pumped dry
06-18-20	0830	550		489	gray					pumped dry
	0930	625		1216H	dk gray					pumped dry
	1030	675		561	gray					pumped dry
	1040	700		715	dk gray	6.7,	16.2,	11.3,	176,	dry

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 800 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters Sec % QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☒	☐

If no or N/A explain below:

Pumped dry three times, turbidity decreasing, all except turbidity and ORP are stable, well is considered developed.

Signature: [signature] Date: 06-18-20

Well/Piezometer Development Record

Well ID: BR-002

Client: USACE

Project No: 60608703 Date: 6-17-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	SpC	ORP	Other
06-18-20	1120	750		520	grey	7.2	14.6	103.1	136	dry
	1203	800		404	grey	7.7	15.7	104.2	133	dry
	1235	900		604	grey	7.5	16.0	105.1	144	dry
	1315	1025		277	grey	7.3	16.2	222.9	138	dry
	1340	1050		250	clear/grey	7.4	16.3	190.5	137	dry

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 460 gallons
Maximum Turbidity Allowed 10 NTU's
Stabilization of parameters See % ∆ App

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Has parameters stabilized	☐	☑	☐

If no or N/A explain below:
See previous page

Signature: [signature] Date: 06-18-20

AECOM

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: BR-003

Client: USACE

Project No: 60608703 Date: 06-22-20 to 06-23-20 Developer: AECOM/Glacier Drilling

Site Location: Former NIKE-PR-79 Control Area, Rockaway Field

Well/Piezometer Data

Well ☑ Piezometer ☐ Diameter 5.0 in Material NA

Measuring Point Description ground

Depth to Top of Screen (ft.) NA

Depth to Bottom of Screen (ft.) NA

Total Well Depth (ft.) 300.0

Depth to Static Water Level (ft.) 11.4

Geology at Screen Interval (If known) Fractured bedrock

Time of Water Level Measurement 1900 2188 AKB 3/22

Calculate Purge Volume (gal.) ~~299~~ well volume

Disposal Method TOW DNW - Frac tank

Headspace

Original Well Development ☑ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD Compressed air

PURGE METHOD Compressed air

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	ORP	Other SpCo
06/22/20	1410	50		388	gray	7.2	15.16	130	139
	1415	100		84.4	lt. gray	7.3	13.18	84.1	127
	1420	150		59.6	lt. gray	7.3	12.81	61.5	127
	1425	100		54.3	lt. gray	7.4	12.58	51.6	125
	1430	200		54.3	lt. gray	7.5	12.31	36.2	124
	1435	220		74.3	lt. gray	7.5	12.25	32.1	120
	1440	235		75.7	lt. gray	7.6	12.73	27.2	115
	1445	250		81.1	lt. gray	7.8	13.42	22.5	112

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 800 gallons
Maximum Turbidity Allowed 50 NTUs
Stabilization of parameters ____%
- See QAPP

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Has parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature [signature] Date: 06-23-20

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Well/Piezometer Development Record

Well ID: BR-003

Client: USACE

Project No: 60608703 Date: 6-22-20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	ORP	Other SpCo	
6/22/20	1450	260	–	101	lt gray	7.8	13.3	32.9	111	
	1455	265		108	lt. gray	7.9	13.65	33	111	pumped dry
	1525	285		103	lt. gray	7.4	13.74	149.5	119	
	1530	305		127	lt. gray	7.5	12.24	145.4	120	
	1535	320	–	77.3	lt gray	7.7	12.34	128.5	107	pumped dry
6/23/20	0850	365		318	lt gray	7.7	13.27	190.7	140	
	0855	405		63.1	clear	7.5	12.04	73	94	
	0900	455		35.1	clear	7.3	11.87	50.2	90	
	0905	500		39.7	clear	7.3	12.15	33.3	100	
	0910	550		22.0	clear	7.2	12.27	25.1	102	pumped dry
	0950	560		35.7	clear	7.0	15.06	27.7	106	
	0955	570		193	lt. gray	7.0	12.24	12.9	118	
	1000	580		179	lt. gray	7.2	13.63	14.3	96	
	1005	590		193	lt. gray	7.3	13.28	18.4	94	
	1010	600		115	lt gray	7.3	13.48	28.0	93	
	1015	610		111	lt. gray	7.5	13.87	32.2	94	
	1020	625		84.2	clear/gray	7.6	14.86	46.2	94	
	1025	635		79.7	clear/gray	7.6	14.67	59.5	96	
	1030	650		81.7	lt. gray	7.6	14.99	68.8	97	
	1035	660		74.8	lt. gray	7.8	15.45	73.1	98	
	1040	670		81.9	lt. gray	7.8	15.97	68.9	99	
	1045	680		75.1	lt. gray	8.1	16.35	78.1	99	
	1050	690		85.0	lt. gray	7.9	15.84	97	103	pumped dry

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 583 gallons

Maximum Turbidity Allowed 10 NTUs or 10%

Stabilization of parameters See % App

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Has parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature: [signature]

Date: 06-23-20

Well/Piezometer Development Record

Well ID: BR-004

Client: USACE

Project No: 60608703 Date: 6-23-20 Developer: Glacier Drilling

Site Location: NIKE PR-79, Foster, RI

Well/Piezometer Data

Well ☒ Piezometer ☐ Diameter 5.0 in Material NA

Measuring Point Description: ground surface

Geology at Screen Interval (if known): Fractured bedrock

Depth to Top of Screen (ft.): NA

Depth to Bottom of Screen (ft.): NA

Time of Water Level Measurement: 1300

Total Well Depth (ft.): 300.0

Calculable Purge Volume (gal.): ~~295~~ 287 AKB 362

Depth to Static Water Level (ft.): 12.45

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD Compressed air

PURGE METHOD Compressed air

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	ORP	SPCO	Other
06/23/20	1445	50		HIGH	gray					
	1500	150		HIGH	gray					
	1510	300		HIGH	dark gray					pumped dry
06/24/20	0900	550		HIGH	dark gray					- flow leachate / partial
	0940	575		HIGH	dark gray					
	1045	600		HIGH	dark gray					pumped dry
06/25/20	0800	670		HIGH	dark gray					120 ft. leachate after 20 hours
	0900	680		560	dark gray	9.5	18.38	175	456	

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 880 gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters See % QAPP

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Has parameters stabilized	☒	☐	☐

If no or N/A explain below:

Turbidity 10%

Signature: [signature] Date: 06/25/20

Well/Piezometer Development Record

Well ID: PR-004

Client: USACE

Project No: 60608733 Date: 6.23.20 Developer: Glacier Drilling

Site Location: MKE PR-79, Foster, RI

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	ORP	Other SPC
06/25/20	0905	700		586	dk gray	8.4	14.02	189	303
	0910	715		263	lt. gray	8.0	12.98	190	276
	0915	730		134	lt gray	8.0	13.06	182	281
	0920	745		124	lt. gray	8.1	13.2	174	282
	0925	760		115	lt gray	8.2	13.78	164	289
	0930	775		76.5	lt gray	8.4	14.41	154	293
	0935	790		78.5	lt. gray	8.4	14.36	152	292
	0940	805		78.9	lt gray	8.4	14.7	150	292
	0945	820		76.2	"	8.3	14.46	152	293
	0950	835		80.1	lt. gray	8.3	15.56	150	295
	0955	850		77.3	lt. gray	8.4	14.07	142	302
	1000	865		46.2	clear	8.3	13.63	132	307
	1005	880		73.3	lt. gray	8.2	12.95	109	303
	1010	895		50.9	lt. gray	8.2	12.82	102	305
	1015	905		51.7	clear	8.2	12.98	102	305
	1020	915		49.9	clear	8.4	12.80	97	309

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 880 gallons
Maximum Turbidity Allowed 50 NTUs
Stabilization of parameters 10 % 0.440

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Has parameters stabilized	☑	☐	☐

If no or N/A explain below
See page 1

Signature: [signature] Date: 06/25/20

AECOM

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: BR-005

Client: USACE

Project No: 60608703 Date: 06-19-20 to 06-22-20 Developer: AECOM / Glacier Drilling

Site Location: Former NIKE PR-79 Control Area, Roukous Solar Farm

Well/Piezometer Data

Well ☑ Piezometer ☐ Diameter 5.0 Material NA

Measuring Point Description: ground

Geology at Screen Interval (if known): Fractured Bedrock

Depth to Top of Screen (ft.): NA

Depth to Bottom of Screen (ft.): NA

Time of Water Level Measurement: 0820 279, AKB 3/22

Total Well Depth (ft.): 300.0

Calculate Purge Volume (gal.): ~~206~~ well volume

Depth to Static Water Level (ft.): 20.2

Disposal Method: IDW drums - Frac tank

Headspace:

Original Well Development ☑ Redevelopment ☐ Date of Original Development:

DEVELOPMENT METHOD: Compressed air

PURGE METHOD: Compressed air

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	ORP,	Other SpC
06/19/20	1000	150		High, v. dark gray, laden w/ sediment					
	1030	300		861 dark gray					
	1100	375		HIGH v. dark gray					
	1115	450		HIGH, v. dark gray, heavy w/ sediment, pumped dry					
	1200	500		HIGH " " pumped dry					
	1220	530		805, dk gray pumped dry					
	1250	570		692 gray pumped dry					
	1325	650		425, gray 7.3, —, 151, 204, pumped dry					

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required 652 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters ____ %

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Has parameters stabilized	☑	☐	☐

If no or N/A explain below: Stable for 3 readings, pumped dry 3 times, 3x well volume removed (decreasing turbidity)

See QAPP

Signature: [signature] Date: 06-22-20

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Well/Piezometer Development Record

Well ID: BR-005

Client: USACE

Project No: 60608703 Date: 6.19.20 Developer: Glacier Drilling

Site Location: NIKE BR-79, Foster, RI

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	ORP,	Other SP, Co
06/19/20	1400	725		278	lt. gray,	7.5,	12.0	222,	162, pumped dry
	1440	800		479	lt. gray	7.6	16.5	210	153, pumped dry
	1515	850		349	lt. gray	7.6	16.3	272	153, pumped dry
	1550	900		293	clear	7.8	15.5	315	159, dry
6/22/20	0950	0950		168	clear	7.7	13.9	116	188
	0955	1000		180	clear	6.8	13.3	56.9	180
	1000	1025		146	clear	6.6	13.1	43	176
	1005	1075		119	clear	6.8	12.9	34.6	163
	1010	1100		129	clear	6.7	12.5	36.2	166
	1015	1150		59.6	clear	6.9	12.8	28.2	161 pumped dry

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required _____ gallons

Maximum Turbidity Allowed _____ NTU's

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Has parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature: [signature] Date: 6-22-20

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: PZ-001

Client: USACE

Project No: 60608703 Date: 6/15/20 Developer: Dylan Potters

Site Location: Nike PR79 Control Area

Well/Piezometer Data

Well ☐ Piezometer ☒ Diameter 2" Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): NA

Depth to Top of Screen (ft.): unknown 5.5

Depth to Bottom of Screen (ft.): unknown 15.5

Time of Water Level Measurement: 0915

Total Well Depth (ft.): 15.77

Calculate Purge Volume (gal): 1 volume = 3.9 gal 1.19 AMB 3/22

Depth to Static Water Level (ft.): 10.34

Disposal Method: drum - frac tank

PVC to ground = 2.50'

Headspace:

Original Well Development ☐ Redevelopment ☒ Date of Original Development: July, 2013

DEVELOPMENT METHOD waterra and surge block

PURGE METHOD whale pump

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
1020	1.0	NA	—	brown - heavy silt			Dry - surged
1210	2.0	NM	over	brown			Dry - surged
1515	3.0	NM	over	brown			Dry - surged
1/15 DTW - 10.45 0855	4.0	NM	over	brown			Dry - surged
1210	5.0	NM	829	brown			Dry
1435	5.75	NM	322	light brown	—	—	Dry
1520	6.25	NM	283	light brown	5.94	15.48	SPC: 67, DO: 8.98, ORP: 152.0

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 12 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters see % @ App

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Has parameters stabilized	☐	☐	☐

If no or N/A explain below
Surged and purged dry > 3 times with lowering turbidity per SOP

Signature: [signature] Date: 6/16/20

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: PZ-005

Client: USACE

Project No: 60608703 Date: 6/15/20 Developer: Dylan Potter

Site Location: Nike PR79 control Area

Well/Piezometer Data

Well ☐ Piezometer ☒ Diameter 2" Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): NA

Depth to Top of Screen (ft.): unknown 6.5

Depth to Bottom of Screen (ft.): unknown 11.5

Time of Water Level Measurement: 0925

Total Well Depth (ft.): 11.41

Calculate Purge Volume (gal.): 1 volume = ~~195~~ gal 0.42 AKB 3/22

Depth to Static Water Level (ft.): 9.49

PVC to ground = 2.29'

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☐ Redevelopment ☒ Date of Original Development: July 2013

DEVELOPMENT METHOD: surge block

PURGE METHOD: whale pump

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
	1150	<0.25	NM	over	brown-gray	-	—	Dry
6/18	1545	~0.5	NM	over	brown-gray			Dry-surged
DTW=9.66	0905	0.75	NM	over	brown-gray			Dry-surged
	1550	~0.9	NM	over	brown-gray			Dry-surged
17 DTW=9.77	0940	1.0	NA	104	light brown	4.00	16.76	SPC:92 DO:7.74 ORP:246.4
								Dry-surged

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 5.85 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters 1 sep % @ APP

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☒	☐

If no or N/A explain below:
Surged and purged dry 3 times with lowering turbidity per SOP

Signature: [signature] Date: 6/17/20

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: PZ-007

Client: USACE

Project No: 60608703 Date: 6/12/20 Developer: Glacier Drilling

Site Location: Nike PR79 Control Area

Well/Piezometer Data

Well ☐ Piezometer ☒ Diameter: 2' Material: PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): NA

Depth to Top of Screen (ft.): unknown 3

Depth to Bottom of Screen (ft.): unknown 13

Time of Water Level Measurement: 1255

Total Well Depth (ft.): 13.2

Calculate Purge Volume (gal.): Volume: ~~3.88~~ gal 1.28 AKB 3/22

Depth to Static Water Level (ft.): 7.62

Disposal Method: drum - frack tank

PVC to ground: 1.42'

DTB: ~~14.6~~ 13.2

Headspace:

Original Well Development ☐ Redevelopment ☒ Date of Original Development: July 2013

DEVELOPMENT METHOD: waterra valve + surge block

PURGE METHOD: whale pump

	Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
	1302	1.0						Dry - surged
	1340	1.5	recharged only 3' DTW 11.6' from pvc					↓
	1400	1.75	recharged only 2.6' DTW 13' from PVC					
5/15 DTW=10.84	1046	2.25	NM	over	Brown	—	—	Dry
	1525	2.55	NM	over	Brown	—	—	Dry - surged
5/16 DTW=11.91	0912	~2.8	NM	over	Brown			Dry - surged
	1545	3	NM	over	Brown			Dry - surged
6/17 DTW=12.42	0925	3.1	NA	397	light brown	5.30	17.04	SPC: 371, DO: 5.75, ORP: 122.7 Dry - surged

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required: 11.5 gallons

Maximum Turbidity Allowed: 10 NTUs

Stabilization of parameters: See %QAPP

	Yes	No	NA
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Has parameters stabilized	☐	☒	☐

If no or N/A explain below:

Surged and purged dry 3x with lowering turbidity per SOP

Signature: [signature] Date: 6/17/20

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: PZ-010

Client: USACE

Project No: 60608703 Date: 6/15 Developer: Dylan Potter

Site Location: Nike PR79 Control Area

Well/Piezometer Data

Well ☐ Piezometer ☒ Diameter 2" Material PVC

Measuring Point Description: Ground Surface

Geology at Screen Interval (if known): NA

Depth to Top of Screen (ft.): unknown 3.9

Depth to Bottom of Screen (ft.): unknown 13.9

Time of Water Level Measurement: 0920

Total Well Depth (ft.): 13.67

Calculate Purge Volume (gal.): 1 volume = ~~4.38~~ gal 1.40 AKB 3/22

Depth to Static Water Level (ft.): 7.36

PVC to ground = 2.45

Disposal Method: drum - frac tank

Headspace:

Original Well Development ☐ Redevelopment ☒ Date of Original Development: July 2013

DEVELOPMENT METHOD: Waterra + surge block

PURGE METHOD: whale pump

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
1045	1.0	NM	over range	brown - heavy silt			Dry - surged
1400	2.0	~~over~~	over range	brown			Dry - surged
1615	2.75	NM	over range	brown			Dry - surged
6/16 DTW=7.41 0830	3.75	NM	over range	dark brown - gray			Dry - surged
1150	4.5	NM	251	light gray			Dry
1420	5	NM	186	light gray			Dry
1535	5.3	NM	201	light gray	5.37	16.37	SPC: 105, DO: 6.45, ORP: 147.8

ACCEPTANCE CRITERIA (from workplan)
Minimum Purge Volume Required 13.2 gallons
Maximum Turbidity Allowed 10 NTUs
Stabilization of parameters See % QAPP

	Yes	No	N/A
Has required volume been removed	☐	☑	☐
Has required turbidity been reached	☐	☑	☐
Has parameters stabilized	☐	☑	☐

If no or N/A explain below:
Surged and purged >3 times with lowering turbidity per SOP

Signature: [signature] Date: 6/16/20

AECOM

Attachment 1
Well Development Record

Well/Piezometer Development Record

Well ID: PZ-014

Client: USACE

Project No: 60608703 Date: 6/15 Developer: Dylan Potter

Site Location: Nike PR79 Control Area

Well/Piezometer Data

Well ☐ Piezometer ☒ Diameter ~~PVC~~ 2" Material PVC

Measuring Point Description: Ground surface

Geology at Screen Interval (if known): NA

Depth to Top of Screen (ft.): unknown 7.5

Depth to Bottom of Screen (ft.): unknown 12.5

Time of Water Level Measurement: 1400

Total Well Depth (ft.): 12.44

Calculate Purge Volume (gal.): 1 volume = ~~3.19~~ gal 0.91 AKB 3/22

Depth to Static Water Level (ft.): 8.30

PVC to ground: 2.87'

Disposal Method: drum - / frac tank

Headspace:

Original Well Development ☐ Redevelopment ☒ Date of Original Development: July 2013

DEVELOPMENT METHOD: surge block + waterra

PURGE METHOD: whole pump

Time	Total Volume Purged (gal.)	Flow Rate (gpm)	Turbidity (NTU)	Color	pH	Temp	Other
1415	~~NM~~ 0.5	NM	over range	light gray			Dry - surged
1500	1.0	NM	over range	light gray			Dry - surged
1600	2.0	NM	over range	brownish-gray			Dry - surged
0820	2.75	NM	over range	brown-gray			Dry - surged
1030	3.5	~~3+1~~	3+1 ~~light brown~~	light brown	NM	NM	Dry
1230	4.25	NM	232	light brown	NM	NM	Dry
14.10	4.75	NM	172	light brown	NM	NM	Dry
1600	5.25	NM	180	light brown	3.75	12.21	SPC: 57, D.O. 3.36, ORP: 274.4

6/16 DTW: 8.44

ACCEPTANCE CRITERIA (from workplan)

Minimum Purge Volume Required _____ gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____ %

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☐	☐	☒
Has parameters stabilized	☐	☐	☒

If no or N/A explain below:

slow recharge: surged and purged dry >3 times with lowering turbidity per SOP

Signature: [signature] Date: 6/16/20

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12.25

Appendix E

Groundwater Sampling Logs

AECOM

Well ID: PR79-MW-001

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 11/16/2020
Time: Start 1200 am/pm
Finish 1400 am/pm
Project No: 60608703
Site Location: PR79 Foster, RI
Weather Conds: sunny, high 50's, windy
Collector(s): John Shannon / Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 32.0
c. Length of Water Column 11.42 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 20.58
d. Calculated System Volume (see back) 7.06

2. WELL PURGE DATA

a. Purge Method: peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556MPS	09D100420
	Hach Turbidity Meter		19092241
	solinst WLM		MP30-1211

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	~~Drawdown~~ (feet) DTW	Color/Odor
1205	1.00	11.83	7.87	126	5.2	247	8.22	200	22.19	cloudy
1210	—	12.07	8.29	121	5.3	219	4.13	175	22.63	clear
1215	—	12.15	8.55	121	5.1	203.9	1.13	160	22.94	"
1220	3.8	12.32	8.59	121	5.2	200.0	0.02	150	22.94	"
1225	—	12.32	8.59	121	3.8	199.1	0.02	150	22.95	clear
1230	—	12.15	8.55	120	4.5	200.3	0.02	—	22.95	"
1235	6.6	11.07	8.44	117	5.9	202.0	0.02	—	22.95	clear

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.
stable @ 1355

3. SAMPLE COLLECTION: Method: Grab

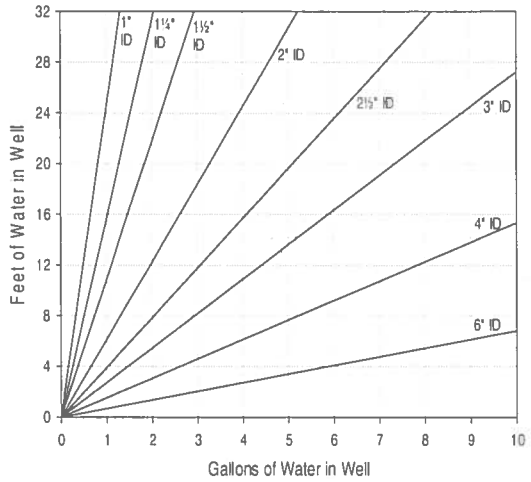
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-001-01					@ 1400
PR79-GW-FD01-01					

Comments Headspace 0.3ppm

Signature Andrew Bo[illegible]
Date 10/19/2021

Purge Volume Calculation

AECOM



PR79-MW-001

Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	~~Drawdown~~ DTW (ft)	Color/Odor
1240		12.26	8.38	115	10.0	201	1.92	150	22.95	clear
1245		12.37	8.48	117	11.1	197	43.1	150	22.95	cloudy
1250		12.29	8.31	114	12.3	196	21.6	150	22.95	clear
1255		11.04	8.16	112	16.1	202	30.6	150	23.02	clear
1300	10.6	12.12	8.11	112	20.1	199	60.0	175	23.31	cloudy
1305		12.39	8.14	114	20.0	195	199	175	23.49	cloudy
1310		11.0	8.04	113	22.5	200.9	135	175	23.58	"
1315	13.2	11.69	8.07	113	22.3	200.6	143	175	23.66	"
1320		11.67	8.10	111	23.4	197	177	175	23.71	"
1325	15.1	11.82	8.12	112	14.7	197	159	175	23.79	"
1330		11.80	8.13	112	13.9	197	143	175	23.83	"
1335	17	11.91	8.21	112	12.8	194	125	175	23.89	"
1340		11.7	8.23	112	11.8	194	101	175	23.94	"
1345	18.9	11.63	8.36	112	10.5	192	55.6	150	23.98	"
1350		11.52	8.38	112	9.7	191	50.7	150	24.02	"
1355	20.8	11.32	8.51	113	9.6	190	57.2	150	24.06	"

AKB
10/19/21

AECOM

Well ID: PR79-MW-002

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 11/16/2020
Time: Start 1155 am/pm
Finish 1325 am/pm
Project No: 60608703
Site Location: PR79 Foster, RI
Weather Conds: 58°F, sunny
Collector(s): Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 28'
c. Length of Water Column 8.5' (a-b)
Casing Diameter/Material 2" pvc
b. Water Table Depth 19.50'
d. Calculated System Volume (see back) 5.26 liters

2. WELL PURGE DATA

a. Purge Method: Peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Ysi	556 MPS	03L0628AE
	GeoTech Turbidity Meter		19062099
	Solinst WLM		MP30-1211

Time (24hr)	Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	~~Drawdown~~ (feet) DTW	Color/Odor
1200	0.4	14.41	6.45	248	10.77	151.4	28.2	80	19.67	None/clear
1205	0.8	12.38	5.66	134	2.09	116.3	36.4	80	19.81	" / "
1210	1.2	12.09	~~5.85~~	132	2.11	104.1	30.0	80	21.10	" / "
1215	1.6	12.08	5.45	135	2.02	89.7	19.6	80	21.28	" / "
1226	2.0	11.92	5.27	140	2.16	82.1	79.6	80	21.30	" / "
1225	2.4	11.44	5.65	234	0.49	-39.7	70.4	80	21.32	" / "
1230	2.8	11.35	5.84	199	0.52	-38.3	74.9	80	21.38	" / "

5.58

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

(continued on back)

If no or N/A - Explain below.

Stable @ 1320

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-002-01					@ 1325

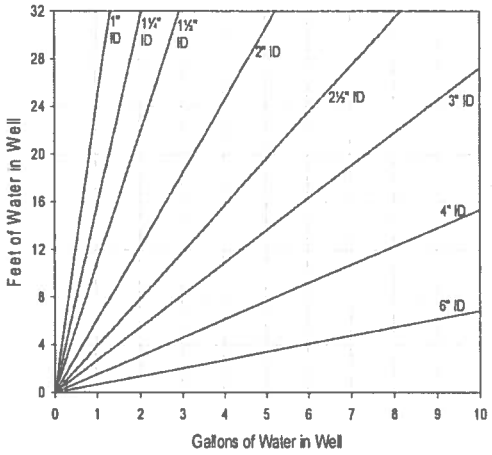
Comments Headspace 0.2 ppm HACH Test Pre Sample: 0.40 mg/L
Post Sample: 0.36 mg/L

Signature Leah Zogby
Date 11/16/2020

Purge Volume Calculation

AECOM

PR79-MW-002



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	DTW ~~Drawdown~~ (ft)	Color/Odor
1235	3.2	11.13	5.82	176	0.48	-32.8	69.3	80	21.38	None/clear
1240	3.6	11.38	5.77	170	0.36	-26.3	71.7	80	21.44	↓
1245	4.0	11.47	5.82	168	0.49	-25.2	47.7	80	21.49	↓
1250	4.4	11.46	5.88	167	0.47	-20.4	31.5	80	21.55	↓
1255	4.8	11.12	5.81	165	0.35	-14.8	28.8	80	21.61	↓
1300	5.2	11.21	5.85	164	0.44	-18.9	24.7	80	21.66	↓
1305	5.6	11.23	5.75	162	0.49	-18.2	24.1	80	21.73	none/clear
1310	6.0	11.10	5.75	163	0.46	-19.6	23.4	80	21.74	↓
1315	6.4	11.07	5.74	162	0.52	-20.1	25.1	80	21.78	↓
1320	6.8	11.03	5.74	163	0.54	-22.6	23.8	80	21.79	↓

AECOM

Well ID: PR79-MW-003

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 11.16.2020
Time: Start 1130 am/pm
Finish 1257 am/pm
Project No: 60608703
Site Location: PR79 Foster, RI
Weather Conds: sunny, breezy, 50's
Collector(s): Chris Hayden / Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 35.0'
c. Length of Water Column 13.82' (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 21.18'
d. Calculated System Volume (see back) ~~8.56~~ 8.54 liters

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556 MPS	15D101642
	GeoTech Turbidity meter	Portable	19092241
	Heron Skinny WLM		28703

Time (24hr)	Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1132	Start	pumping								
1137	0.5	11.96	8.59	186	0.66	-142.6	29.0	136	22.22	clear/yes*
1142	1.0	11.99	8.03	175	0.53	-137.3	3.00	130	22.58	↓
1147	2.0	11.91	7.47	144	2.52	-69.6	<0.02	130	22.99	↓
1152	2.5	11.80	7.42	142	3.49	-57.2	<0.02	130	23.25	↓
1157	3.0	11.89	7.39	140	3.62	-45.7	<0.02	130	23.47	↓
1202	4.0	11.82	7.33	137	3.71	-28.3	<0.02	130	23.76	↓

(continued on back) →

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.
Stable @ 1257

3. SAMPLE COLLECTION: Method: Grab

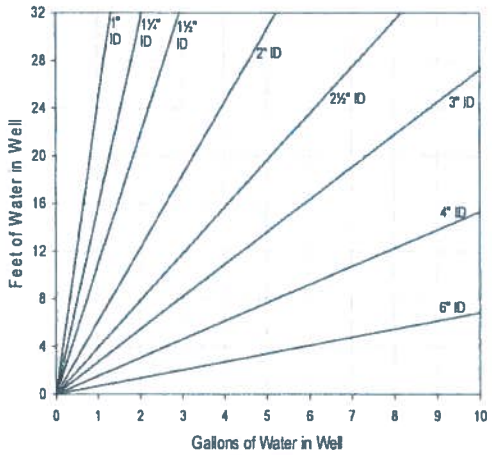
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-003-01					1257

Comments * rotten eggs

Signature Leah Zogby
Date 11.16.2020

Purge Volume Calculation

AECOM



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

PR79-MW-003

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1207	4.5	11.87	7.30	135	4.05	-11.1	1.69	130	23.93	clear/yes*
1212	5.0	11.71	7.30	132	4.32	-0.2	<0.02	130	24.12	↓
1217	6.0	11.81	7.27	132	4.66	11.7	↓	130	24.27	↓
1222	6.5	11.87	7.16	128	4.97	26.0	↓	140	24.41	↓
1227	7.0	11.54	7.25	128	5.33	32.0	↓	140	24.52	↓
1232	8.0	11.54	7.21	129	5.44	39.8	↓	140	24.61	↓
1237	8.5	11.64	7.13	127	5.43	48.6	↓	150	24.74	↓
1242	9.0	11.57	7.18	127	5.71	52.1	<0.02	150	24.81	clear/yes*
1247	10.0	11.60	7.26	~~128~~	5.74	52.9	↓	150	24.87	↓
1252	10.5	11.28	7.20	128	5.86	~~50.8~~	↓	150	24.88	↓
1257	11.0	11.42	7.16	128	5.81	60.4	↓	150	24.84	↓
				127 AKB 10/20/21		55.8	AKB 10/20/21			

AECOM

Well ID: P2-001

Low Flow Ground Water Sample Collection Record

Client: MKE PR-79 Date: 11-17-20 Time: Start 1000 am/pm
Project No: 60608703 Finish 1030 am/pm
Site Location: PR-79 Foster, RI
Weather Conds: partly to mostly cloudy, temp 18.5 - 25° Collector(s): J Sharman

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 18.33 c. Length of Water Column 0.31 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 18.02 d. Calculated System Volume (see back) 0.05 gal 0.19 L

Headspace - 0.3 ppm

2. WELL PURGE DATA

a. Purge Method: peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	09D100420
	Hach Turbidity Meter		19062099
	Solisnt Water Level Meter	101	251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.

No readings - well pumped dry

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments Dry - no water sufficient to sample

Signature [signature] Date 11-17-20

AECOM

Well ID: PR79-MW-006

Low Flow Ground Water Sample Collection Record

Pg 1 of 2

Client: USACE
Date: 11.17.2020
Time: Start 1140 am/pm
Finish 1235 am/pm
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: Cloudy, Breezy, 40's
Collector(s): Cliffordon / Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.0'
c. Length of Water Column 7.49' (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 7.51
d. Calculated System Volume (see back) 4.62 liters

2. WELL PURGE DATA

a. Purge Method: Low-Flow Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	09B100420
	Geotech ~~Hach~~ Turbidity Meter	Portable	14062099
	Heron ~~Solinst~~ Water Level Meter		28703

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1150	2	13.74	6.83	409	6.18	210.5	44.7	140	7.77	clear/no
1155	2.5	13.76	6.58	442	5.88	224.8	34.1	140	7.79	↓
1200	3.0	13.62	6.47	433	5.74	238.0	26.4	140	7.81	↓
1205	4.0	13.75	6.39	438	5.42	249.5	18.6	140	7.82	↓
1210	4.5	13.92	6.34	407	5.46	256.7	12.0	140	7.84	↓
1215	5.0	13.91	6.25	402	5.35	266.6	8.23	140	7.84	↓
1220	6.0	13.85	6.11	448	5.49	276.5	7.97	140	7.84	↓

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low-Flow Peristaltic Grab Sample

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-006-01					1235

Comments

Signature Leah Zogby
Date 11/17/2020

AECOM

Well ID: PR79-MW-006

Low Flow Ground Water Sample Collection Record

Pg 2 of 2

Client: USACE
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: Cloudy, Breezy, 40's
Date: 11.17.2020
Time: Start 1140 am/pm
Finish 1235 am/pm
Collector(s): C Hayden/Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.0'
b. Water Table Depth 7.51
c. Length of Water Column 7.49' (a-b)
d. Calculated System Volume (see back) 4.62 liters
Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Low-Flow Peristaltic

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	09D100420
~~Geotech~~ ~~Hach~~ Turbidity Meter		Portable	1906 299
Heron ~~Solinst~~ Water Level Meter			28703

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1225	6.5	14.12	6.05	481	5.34	284.4	4.85	140	7.85	clear/no
1230	7.0	14.01	6.00	494	5.28	292.8	4.23	140	7.85	↓ ↓
1235	8.0	14.07	5.92	499	5.25	293.6	2.86	140	7.85	↓ ↓
	SAMPLED									

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low-Flow Peristaltic Grab Sample

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
					1235

Comments Fe^{2+}: 0.01 mg/L (before)
Fe^{2+}: 0 mg/L (after)

Signature Leah Zogby
Date 11/17/2020

AECOM

Well ID: PZ-007

Low Flow Ground Water Sample Collection Record

Client: Army Corps Date: 11.17.2020 Time: Start 10 25 am/pm
Project No: 60608703 Finish — am/pm
Site Location: PR-79 Foster, RI
Weather Conds: 50°F, partly cloudy Collector(s): L. Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.35' c. Length of Water Column .42' (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 14.93' d. Calculated System Volume (see back) 0.27 liters

2. WELL PURGE DATA

a. Purge Method: Peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	NM
	Hach Turbidity Meter		NM
	Solisnt Water Level Meter		251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.

Dry during initial purge

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req	Time
PR79-PZ-007-01					

Comments Dry upon first purge - waiting for recharge @ 1030. Headspace: 0.3 ppm No readings/samples taken @ 1300

Signature Leah Zogby Date 11.17.2020

AECOM

TT

Well ID: PZ-014

Low Flow Ground Water Sample Collection Record

Client: Army Corps
Date: 11.17.2020
Time: Start 1050 am/pm
Finish — am/pm
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: 50° Partly cloudy
Collector(s): L. Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.31'
c. Length of Water Column 0.22' (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 15.09'
d. Calculated System Volume (see back) ~~0.27 liters~~ 0.15 liters LZ

2. WELL PURGE DATA

a. Purge Method: peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	—
	Hach Turbidity Meter		—
	Solisnt Water Level Meter		251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.

Dry

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments Dry: No readings taken. No samples collected. PID Headspace: 1.0 ppm

Signature Leah Zogby
Date 11.17.2020

AECOM

Well ID: PZ-010

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 11.17.2020 Time: Start 0930 am/pm
Project No: 60608703 Finish — am/pm
Site Location: PR-79 Foster, RI
Weather Conds: 50°F, partly cloudy Collector(s): L. Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.11' c. Length of Water Column NA (a-b)

Casing Diameter/Material 2" pvc

b. Water Table Depth — d. Calculated System Volume (see back) —

2. WELL PURGE DATA

a. Purge Method: ~~peristaltic~~ LZ

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	
Hach Turbidity Meter			
Solisnt Water Level Meter			

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below. No readings → Well Dry

3. SAMPLE COLLECTION: Method:

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments DRY - No water, DTW @ DTB. (16.11') Hard bottom
Headspace: 1.3 ppm No readings/samples taken.

Signature L. Zogby Date 11.17.2020

AECOM

Well ID: PR79-MW-005

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 11/23/2020
Time: Start 1330 am/pm
Finish 1500 am/pm
Project No: 60608703
Site Location: PR79, Foster RI
Weather Conds: 38°F, sunny
Collector(s): John Shannon / Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 13.00
c. Length of Water Column 1.87' (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 11.13
d. Calculated System Volume (see back) 1.16 liters

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556 MPS	09D100420
	Turbidity Meter	GeoTech	19092241
	Solinst water level meter		MP30-1211

Time (24hr)	Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1330	—	11.7	7.09	230	8.50	205.9	730	150	12.39	gray
1340	1.2	12.6	6.84	179	8.63	216.7	392	150	12.93	dry
1345	—	12.48	—	203	8.06	240	556	150	—	—
1410	—	12.19	6.31	27	7.53	272	372	150	—	—
1415	—	~~12.39~~	6.12	59	7.61	284	49.9	150	12.75	—
1420	1.5	12.46	6.17	84	7.78	289	130	150	—	dry

} pause for recharge

12.33 AKB 10/20/21

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.

well dry @ 1500, sampled before readings

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-005-01	1-L Amb.	(2)	None	SVOCs	1330
	250 mL HDPE	(1)	None	Alk and Anions	
	250 mL HDPE	(2)	HNO_3	Total + Diss Metals	
	40 mL vial	(6)	HCl	VOCs, VOCs SIM, MEC	
	40 mL vial Amb.	(2)	H_2SO_4	TOC	
	500 mL HDPE	(1)	Zinc Ace / NaOH	Sulfide	

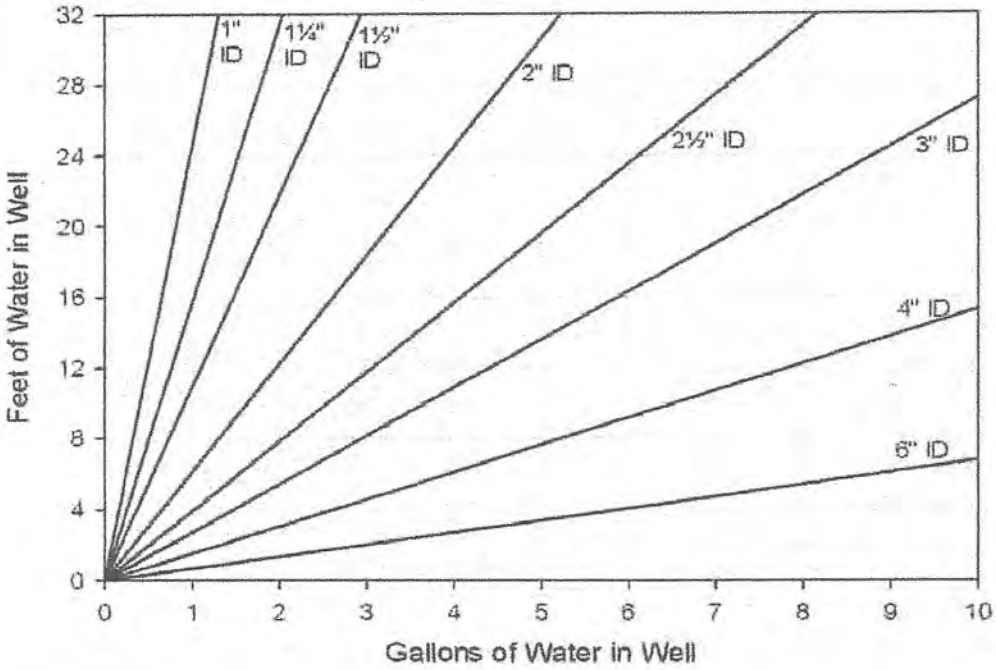
Comments

Signature Leah Zogby
Date 11/23/2020

Purge Volume Computation

Well ID: MW-005

11-23-20



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
¼	0.0025	0.0097
5/16	0.0057	0.0217
½	0.0102	0.0386
¾	0.0229	0.0869
1	0.0408	0.1544
1¼	0.0637	0.2413
1½	0.0918	0.3475
2	0.1632	0.6178
2½	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (min)	Volume Removed (gal)	Temp. (°C)	pH s.u.	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (m)	Color/Odor/etc.
1450		12.04	5.86	51	7.57	323	69.1	200	11.65	
1455		12.09	5.70	52	7.61	330	37.4	200	12.61	
1500	1.5	12.33	5.99	65	7.56	329	63.3	200	13.00	— dry

Signature [signature] Date 11/23/20

AECOM

Well ID: PR79-MW-007

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12/1/2020
Time: Start 1249 am/pm
Finish 1413 am/pm
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: PARTLY CLOUDY IN 50s
Collector(s): G. HENOIR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 11.32
c. Length of Water Column 5.47 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 5.85
d. Calculated System Volume (see back) 0.89 gal / 3.38L

2. WELL PURGE DATA

a. Purge Method: LOW FLOW w/ PERISTALTIC PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	09D100420
	~~Hach~~ Turbidity Meter	GEOTECH WL	19092241
	Solisnt Water Level Meter		251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1250	0	12.34	6.15	80	5.10	255.3	5.43	50	5.98	CLEAR
1255	0.2	12.21	5.32	63	5.81	293.5	4.60	↓	6.01	↓
1302	0.5	12.02	5.12	44	5.33	314.6	1.77	↓	6.03	↓
1306	0.7	11.68	5.12	43	5.43	322.8	1.44	↓	6.05	↓
1313	1.2	11.61	5.03	43	5.30	332.6	0.02	↓	6.07	↓
1318	1.5	11.47	4.99	43	5.29	338.7	0.02	↓	6.10	↓
1323	1.7	11.48	4.70	43	5.29	350.2	0.02	↓	6.12	↓

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: GRAB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-007-01	VARIOUS	16	VARIOUS	SEE QAPP	1345

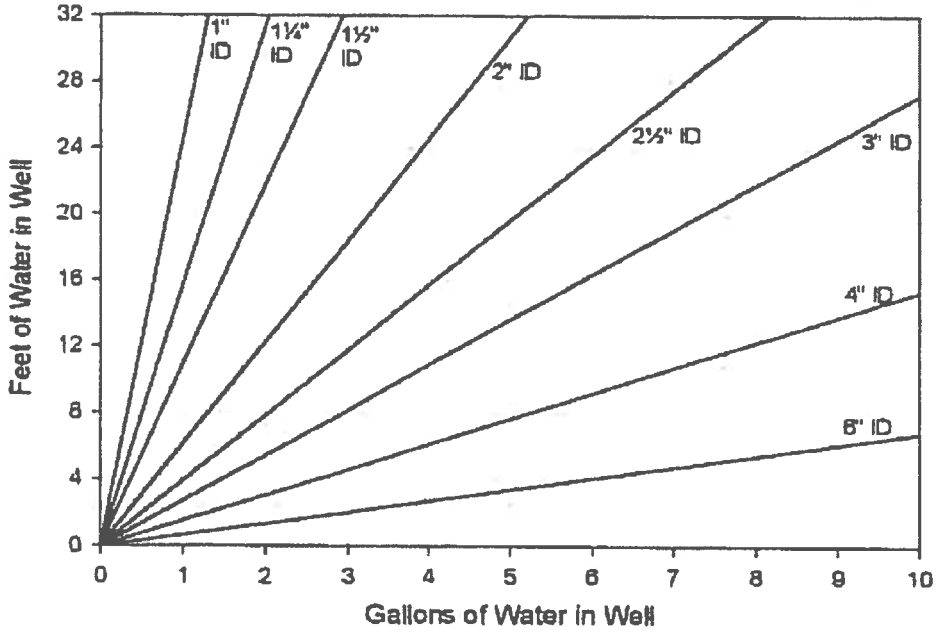
Comments

Signature

Date 12/1/2020

Purge Volume Computation

Well ID: PR09-MW-007



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
¼	0.0025	0.0097
3/8	0.0057	0.0217
½	0.0102	0.0386
¾	0.0229	0.0869
1	0.0408	0.1544
1¼	0.0637	0.2413
1½	0.0918	0.3475
2	0.1632	0.6178
2½	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (min)	Volume Removed (gal)	Temp. (°C)	pH s u	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (~~m~~ FT)	Color/Odor/etc.
1328	1.9	11.38	4.71	43	5.28	357.4	0.02	50	6.13	CLEAR
1333	2.1	11.27	4.77	43	5.27	355.3	0.02	↓	6.14	↓
1338	2.3	11.22	4.82	43	5.25	354.4	0.02	↓	6.14	↓

Signature _____ Date 12/1/2020

AECOM

Well ID: PR79-MW-004

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 12/2/2020 Time: Start 12:30 am/pm
Project No: 60608703 Finish 12:30 am/pm
Site Location: PR-79 Foster, RI
Weather Conds: PARTLY CLOUDY IN 40s Collector(s): G. HENOIR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.40 c. Length of Water Column 0.15 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 16.25 d. Calculated System Volume (see back) 0.09 L

2. WELL PURGE DATA

a. Purge Method: PERISTALTIC PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	
	Hach Turbidity Meter		
	Solisnt Water Level Meter		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.

NO READINGS COULD BE COLLECTED DUE TO LIMITED WATER VOLUME

3. SAMPLE COLLECTION: Method: GRAB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-MW-004-01	VOA	1	HCl	8260	12:30

Comments DRY AFTER ≈ 60mL PURGED - NO RECHARGE AFTER 30 MINUTES

Signature [signature] Date 12/2/2020

AECOM

Well ID: PR79-PZ-010

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12/2/2020
Time: Start 1405 am/pm
Finish 1405 am/pm
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: PARTLY CLOUDY IN 40s
Collector(s): G. HENCIR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.14
c. Length of Water Column 0.14 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 16.00
d. Calculated System Volume (see back) 0.08 L

2. WELL PURGE DATA

a. Purge Method: PERISTALTIC PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	
	Hach Turbidity Meter		
	Solisnt Water Level Meter		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.

NO READINGS DUE TO LIMITED WATER VOLUME

3. SAMPLE COLLECTION: Method: GRAB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-PZ-010	VOA	1	HCl	8260	14:05

Comments DRY AFTER ≈ 60 mL PURGED, NO RECHARGE AFTER 30 MINUTES

Signature [signature] Date 12/2/2020

AECOM

Well ID: PR79-PZ-014

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12/2/2020
Time: Start 13:30 am/pm
Finish 13:30 am/pm
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: PARTLY CLOUDY IN 40S
Collector(s): G. HENCIR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.35 c. Length of Water Column 0.22 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 15.13 d. Calculated System Volume (see back) 0.14 L

2. WELL PURGE DATA

a. Purge Method: PERISTALTIC PUMP

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	
	Hach Turbidity Meter		
	Solisnt Water Level Meter		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.

NO READINGS DUE TO LIMITED WATER VOLUME

3. SAMPLE COLLECTION: Method: GRAB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-PZ-014-01	VOA	2	HCL	8260	13:30

Comments DRY AFTER ≈ 140 mL PURGED. NO RECHARGE AFTER 30 MINUTES
SULFUR ODOR OBSERVED

Signature [signature] Date 12/2/2020

AECOM

Well ID: PZ-005

Low Flow Ground Water Sample Collection Record

Client: Army Corps
Date: 12-02-2020 Time: Start 1328 am/pm
Project No: 60608703 Finish 1330 am/pm
Site Location: PR-79 Foster, RI
Weather Conds: 37°F, overcast Collector(s): L. Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.29' c. Length of Water Column 0.2' (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 14.09' d. Calculated System Volume (see back) ~~<0.2 gallons~~ LZ ~~0.11~~ liters LZ 0.12

2. WELL PURGE DATA

a. Purge Method: peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	N/A
	Hach Turbidity Meter	N/A	N/A
	Solisnt Water Level Meter	N/A	1174-T2

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☐	☐	☒

If no or N/A - Explain below.
No readings taken, not enough volume

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
~~PZ-007-01~~ LZ PZ-005-01	40 mL-VOA	2	HCl	VOCs	1330

Comments high silt and sand content due to low volume.

Signature Leah Zogby Date 12/02/2020

AECOM PRM-WL-003-01

Well ID: PR79-WL-003

Hand Dug well.

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12/3/20
Time: Start 1425 am/pm
Finish 1505 am/pm
Project No: 60608703
Site Location: PR-79 Foster, RI
Weather Conds: cool, mid 40's, sunny
Collector(s): Tracy Dorgan (USACE)

1. WATER LEVEL DATA: (measured from Top of Casing) CONCRETE

a. Total Well Length 9.8'
c. Length of Water Column 6.5' (a-b)
Casing Diameter/Material 2.05'/CONCRETE
b. Water Table Depth 3.3'
d. Calculated System Volume (see back) ~~2.014.56 liters~~ LZ 1.57 liters casing 1.2" ABS

2. WELL PURGE DATA

a. Purge Method: Low Flow via Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556	09D100420
	Geo ~~Tech~~ ~~Hach~~ Turbidity Meter	Portable	19062099
	Solisnt Water Level Meter		251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1425		9.94	7.65	61	2.01	276.2	25.6	250	3.30	clear/no odor
1435		9.93	7.21	60	1.18	299.5	~~0.48~~ .02	250	3.30	
1440		9.93	7.12	60	1.03	299.7	.02	250	3.30	
1445		9.92	7.03	60	0.92	310.5	.02	250	3.30	
1450		9.94	7.02	59	0.93	315.4	.02	250	3.30	
1455		9.94	7.00	59	0.90	319.0	.02	250	3.30	
1500	~8L	9.93	9.00	60	0.90	322.7	.02	250	3.30	clear, no odor, no sheen.

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

stable @ 1500

3. SAMPLE COLLECTION: Method: PERISTALTIC PUMP

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PRM-WL-003-01	2-1L. AMBER		NONE	SVOA/SIM	1505
	1-250ML POLY		HNO3	TOT./DISS METALS	"
	1-250ML POLY		HNO3	FILTERED METALS	
	1-250ML POLY		NONE	ALK./IONS	
	1-500ML POLY		ZINC ACETATE/ SODIUM HYD.	SULFIDE	
	2-40ML VOA VIAL		HCL	MEE	
	2-40ML VIAL		H_2SO_4	TOC	
	3-40ML "		HCL	VOC	
	3-40ML "		HCL	VOC-SIM	

Comments

Signature T. Dorgan - USACE

Date 12/3/2020

AECOM

Shallcross dugwell

Well ID: WL-001

Low Flow Ground Water Sample Collection Record

Client: ~~AECOM~~ USACE Date: 12-04-2020 Time: Start 1140 am/pm
Project No: 60608703 Finish 1220 am/pm
Site Location: PR-79 Foster, RI
Weather Conds: Sunny cool, 53° partly cloudy Collector(s): J. Shannon/Leah Zogby)

1. WATER LEVEL DATA: (measured from Top of Casing) (top of high rock, North side

a. Total Well Length 18.15 c. Length of Water Column 2.27 (a-b) Casing Diameter/Material ≈2.0 ft, stone

b. Water Table Depth 15.88 d. Calculated System Volume (see back) 1.4 liters

2. WELL PURGE DATA

a. Purge Method: peristaltic, soft bottom, tubing set at 16.88

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	556 MPS	09D100420
	GeoTech ~~Hach~~ Turbidity Meter	Portable	19062099
	Solisnt Water Level Meter		251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1145	1 (1)	11.90	5.50	~~6~~ 47	7.38	324	0.02	200	—	clear
1150	1 (2)	11.89	5.67	46	6.91	319	0.02	200	—	clear
1155	1 (3)	11.79	6.14	47	6.80	303	0.02	200	—	clear
1200	1 (4)	11.84	6.26	47	6.74	302	0.02	200	—	clear
1205	1 (5)	11.85	6.37	46	6.73	303	0.02	200	—	clear
1210	1 (6)	11.72	6.38	46	6.69	304	0.02	200	—	clear
1215	1 (7)	11.75	6.47	46	6.65	303	0.02	200	—	clear

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	X		
Has required turbidity been reached	X		
Have parameters stabilized			

~~(continued on back)~~

0.02 Fe iron @ 1152

If no or N/A - Explain below.

Stable @ 1215

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-WL-001-01	1-L Amber glass	(2)	none	SVOCs	1220 (all)
	250 ml HDPE	(1)	none	Alkalinity & Anions	
	250 ml HDPE	(2)	HNO_3	Total Metals & Diss	
	40 ml vial	(6)	HCl	VOC, VOCSIM, MEE (3,3,2)	
	40 ml vial ~~500 ml HDPE~~	(2)	H_2SO_4	TOC	
	500 ml HDPE	(1)	22NAC/NaOH	Sulfide	

Comments

completed sampling @ 1240

Signature Leah Zogby Date 12/04/2020

PR79-WL-002-01

Well ID: Steere Well

AECOM

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12.04.2020
Time: Start 1040 am/pm
Finish 1115 am/pm
Project No: PR-79 60608703
Site Location: PR-79 Foster, RI
Weather Conds: 55°F, sunny
Collector(s): L. Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length —
c. Length of Water Column — (a-b)
Casing Diameter/Material —
b. Water Table Depth —
d. Calculated System Volume (see back) —

2. WELL PURGE DATA

a. Purge Method: Grab (from artesian pump) see picture

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	
Hach Turbidity Meter	18101888 ↔ Geotech	
~~Solisnt Water Level Meter~~		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1040	—	10.80	6.63	138	7.12	76.1	33.0	—	—	Cloudy/None
1045	—	10.74	6.54	132	7.59	76.5	23.3	—	—	" / "
1050	—	11.16	6.69	133	6.78	84.5	0.02	—	—	" / "
1055	—	11.09	6.69	131	6.68	88.6	0.02	—	—	" / "
1100	—	10.88	6.68	131	7.02	90.0	0.02	—	—	" / "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☒ LZ
Has required turbidity been reached	☑	☐	☒ LZ
Have parameters stabilized	☑	☑	☒

If no or N/A - Explain below.
Stability NOT applicable to collection method - purged 20 min

(continued on back)

3. SAMPLE COLLECTION: Method: Grab (no pump)

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req	Time
PR-79-WL-002-01	2x VOA	40 mL VOA	HCl	2x Diss. 3x VOC, 3x VOC sim	
		2x 100 mL Plastic	2x HNO_3, 1x None	Total/FF metals, anions/alkalinity	@
		2x 1 Liter Amb.	LZ ~~SVOCs~~ None	SVOCs	
		2x 40 mL Amber	H_2SO_4	TOC	

Comments Generator used to connect power to Steere Well. (slight gasoline odor)
Purged for 20 min before sampling. (intermitten readings taken).

Signature [signature] Date 12.04.2020

+ 1x 500 mL plastic → Zinc Acetate/NaOH → sulfide @

AECOM

Well ID: P2-007

Low Flow Ground Water Sample Collection Record

Client: USACE Date: 12-08-20 Time: Start 0730 am/pm
Project No: 60608703 60608703 Finish 0845 am/pm
Site Location: PR-79 Foster, RI
Weather Conds: freezing drizzle Collector(s): J. Shannon / Leah Zogby

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.35 c. Length of Water Column 7.93 (a-b) Casing Diameter/Material 2"

b. Water Table Depth 7.42 d. Calculated System Volume (see back) ~~1.3~~ ~~4.88~~ liters
LZ LZ 4.90

2. WELL PURGE DATA

a. Purge Method: peristaltic pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10% or <0.5 mg/L	-Turbidity	<10 NTU or 10%
- pH	± 0.1 unit	- ORP	± 10mV		
- Sp. Cond.	3%	- Drawdown	< 0.3'		

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556	—
Hach Turbidity Meter	—	—
Solisnt Water Level Meter		251927

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

LZ

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☐	☐	☑

If no or N/A - Explain below.
Well was dry previously, sampling carried out immediately to ensure sufficient volume

3. SAMPLE COLLECTION: Method: Grab

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
PR79-P2-007-01	1L Amber	(2)	none	SVOCs	0845
	250 ml HDPE	(1)	none	Alkalinity & Anions	
	250 ml HDPE	(2)	HNO3	Total & Dissolved Metals	
	40 ml Vial	(8)	HCl	VOCs, VOCs/M, MEE	
	40 ml vial	(2)	HCl SO4	TOC	
	500 ml HDPE	(1)	Zinc Acetate / NAOH	sulfide	

Comments

Signature [signature] Date 12-08-20

AECOM

Well ID: **PR79-BR-001**

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12/14/2020 – 12/15/2020
Time: Start 1123 am/pm 12/14
Finish 1128 am/pm 12/15
Project No: 60608703
Site Location: Theodore Foster Road, Foster, RI
Weather Conds: 45°F, rain/sleet
Collector(s): Leah Zogby AECOM

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 300 ft b. Water Table Depth 21 ft bgs c. Water Column (a-b) NA

d. Depth to Water in FLUTe liner < 5 ft. e. Purge Pressure 62 psi f. Sample Pressure 46 psi

2. PORT DATA:

Port	Sampling Interval (ft BGS)	Pump Depth (ft BGS)	Purge Volume (Liters)	Sample Stroke Volume (Liters)	Min. Discard	Initial DTW @ 1050	Before 2nd DTW @ 1220	Before 3rd DTW @ 1340	4th DTW @ 1505
1	28-38	119	4.48	3.23	0.241	18.00'	18.00'	17.93'	18.00
2	51-56	120	4.53	3.23	0.250	21.30'	21.50'	21.01'	21.01
3	100-105	121	4.58	3.23	0.252	~~24.50'~~ 26.00 (est.) AKB	24.50' (est.)	~~24.84~~ 24.84 AKB 10/20/21	24.80

a. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	09D100420
Turbidity Meter	GeoTech	19092241

b. 1st Purge Time/Duration 1123-1132 9 min c. 2nd Purge Time/Duration 1227-1235 8 min
d. 3rd Purge Time/Duration 1341-1349 8 min e. 4th Purge Time/Duration 1510-1518 8 min

Port	Time (24hrs)	Purge Time	pH	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	PID (ppm)	Color/Odor
1	0757	8 min	7.03	9.56	173	5.30	167.1	0.02	NM	None/clear
2	0812	7 min	6.75	8.96	150	6.21	191.4	0.02	NM	↓
3	0821	7 min	6.78	9.78	159	1.34	194.8	0.02	NM	↓

3. SAMPLE COLLECTION:

Sample ID	Analysis	Time
PR79-BR-001-P1-01	VOCs, VOCs SIM, SVOCs, metals (filtered and total), TOC, Diss. Gases, Anions, (Nitrate, Nitrite, Sulfate, Chloride), Alkalinity, Sulfide	@0915
PR79-BR-001-P2-01	↓	@1020
PR79-BR-001-P3-01	↓	@1100
PR79-GW-FD03-01	↓	@0920

Notes: Hach Colorimeter Test (mg/L Ferrous Iron) - Port 1: 0.00 mg/L, Port 2: 0.00 mg/L, Port 3: 0.00 mg/L

Water level meter delay, Purge 1 and 2 estimated using tubing water displacement.

Field Duplicate taken on Port 1.

Signature Leah Zogby

Date 12/14/2020 to 12/15/2020

AECOM

Well ID: PR79-BR-002

Low Flow Ground Water Sample Collection Record

Client: USACE
Project No: 60608703
Site Location: Theodore Foster Road, Foster, RI
Weather Conds: 30°F, Partly Cloudy

Date: 12/15/2020 - 12/18/2020
Collector(s): Leah Zogby (AECOM)

Time: Start 0739 am/pm 12/15
Finish 0935 am/pm 12/18

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 301 b. Water Table Depth 22.5 ft bgs c. Water Column (a-b) NA

d. Depth to Water in FLUTe liner < 5 ft. e. Purge Pressure 63 psi f. Sample Pressure 46 psi

2. PORT DATA:

Port	Sampling Interval (ft BGS)	Pump Depth (ft BGS)	Purge Volume (Liters)	Sample Stroke Volume (Liters)	Min. Discard (Liters)	Initial (14) → DTW @ 0730	Before 2nd Purge → DTW @ 1340	Before 3rd Purge → DTW @ 0715	4th DTW @ 1420
1	31.9-41.9	118.5	4.31	3.15	0.237	18.81	18.95	18.71	19.88
2	61.9-66.9	119.5	4.38	3.15	0.250	20.34	20.41	20.22	21.53
3	76.9-81.9	120.5	4.42	3.15	0.252	26.50	26.79	26.65	27.20
4	89.9-94.9	121.5	4.46	3.15	0.254	26.82	27.17	27.29	27.59
5	266.9-271.9	122.5	4.51	3.15	0.257	29.38	31.74	29.94	31.01
						12/15	12/15	12/16	AKB 10/20/21

a. Field Testing Equipment used:

Make	Model	Serial Number
YSi	556 MPS	09D100420
Turbidity Meter	GeoTech	19092241

12/15 { b. 1st Purge Time/Duration 0739-0745 6 min
d. ~~3rd~~ 2nd Purge Time/Duration 1346-1354 8 min }

c. ~~2nd~~ 3rd Purge Time/Duration 1202-1207 5 min
e. 4th Purge Time/Duration 1430-1438 8 min } 12/16

Port	Time (24hrs)	Purge Time (min)	pH	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	PID (ppm)	Color/Odor
1	0850	7	6.91	9.85	96	8.33	209.3	0.02	NM	None
2	0850	7	8.19	9.79	122	7.55	123.9	0.02	↓	↓
3	0913	6	7.94	9.65	123	6.20	138.2	0.02	↓	↓
4	0910	7	6.91	9.77	112	2.74	217.6	0.02	↓	↓
5	0917	6	6.94	9.55	117	1.47	208.2	0.02	↓	↓

3. SAMPLE COLLECTION:

Sample ID	Analysis	Time
PR79-BR-002-P1-01	VOCs, VOCs SIM, SVOCs, metals (filtered and total), TOC, Diss. Gases, Anions, (Nitrate, Nitrite, Sulfate, Chloride), Alkalinity, Sulfide	0935
PR79-BR-002-P2-01	↓	0940
PR79-BR-002-P3-01	↓	0955
PR79-BR-002-P4-01	↓	1000
PR79-BR-002-P5-01	↓	1015

} 12/18/20

Notes: Hach colorimeter Tests: Port 1 - 0.14 mg/L, Port 2 - 0.00 mg/L, Port 3 - 0.00 mg/L [MS/MSD taken on Port 1] Port 4 - 0.00 mg/L, Port 5: 0.11 mg/L

Signature Leah Zogby

Date 12/15/2020 → 12/18/2020

AECOM

Well ID: **PR79-BR-003**

Low Flow Ground Water Sample Collection Record

Client: USACE
Date: 12/15/2020 – 12/21/2020
Time: Start 1240 am/pm 12/15
Finish 0950 am/pm 12/21
Project No: 60608703
Site Location: Theodore Foster Road, Foster, RI
Weather Conds: 32°F, sunny
Collector(s): Leah Zogby (AECOM)

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 301 ft b. Water Table Depth 13.5 ft bgs c. Water Column (a-b) NA

d. Depth to Water in FLUTe liner < 5ft. e. Purge Pressure 59 psi f. Sample Pressure 43 psi

2. PORT DATA:

Port	Sampling Interval (ft BGS)	Pump Depth (ft BGS)	Purge Volume (Liters)	Sample Stroke Volume (Liters)	Min. Discard (Liters)	Initial (ft) → DTW @ 1240	Before 2nd Purge → DTW @ 1445	Before 3rd Purge DTW @ 1240	4th DTW @ 1338
1	13.9-23.9	110.5	4.39	3.26	0.239	11.49	10.71	11.14	11.06
2	48.9-53.9	111.5	4.46	3.26	0.250	16.35	15.95	16.30	16.14
3	69.9-74.9	112.5	4.5	3.26	0.252	17.45	17.23	17.52	17.98
4	281.9-286.9	113.5	4.54	3.26	0.254	17.30	17.00	18.04	18.53

12/16 AKB 10/20/21

a. Field Testing Equipment used:

Make	Model	Serial Number
Ysi	556 MPS	09D100420
Turbidity Meter	GeoTech	19092241

b. 1st Purge Time/Duration 1241 – 1246 5 min
c. 2nd Purge Time/Duration 1448 – 1452 4 min
d. 3rd Purge Time/Duration 1248 – 1255 7 min (min) 12/16 AKB 10/20/21
e. 4th Purge Time/Duration 1341 – 1348 7 min 12/16 AKB 10/20/21

Port	Time (24hrs)	Purge Time	pH	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	PID (ppm)	Color/Odor
1	0801	6	7.65	9.85	78	4.13	354.5	0.02	NM	None
2	0820	6	6.49	10.05	90	3.92	194.8	6.02	↓	↓
3	0845	7	6.61	9.78	115	1.10	193.1	0.26		
4	0855	6	7.06	10.09	248	0.54	33.2	2.98		

3. SAMPLE COLLECTION:

Sample ID	Analysis	Time
PR79-BR-003-P1-01	VOCs, VOCs SIM, SVOCs, metals (filtered and total), TOC, Diss. Gases, Anions, (Nitrate, Nitrite, Sulfate, Chloride), Alkalinity, Sulfide	0835
PR79-BR-003-P2-01		0905 12/21
PR79-BR-003-P3-01	↓	0930
PR79-BR-003-P4-01		0950 AKB 10/20/21

Notes: Hach Colorimeter Test: Port 1 – 0.16 mg/L, Port 2 – 0.00 mg/L
[MS/MSD taken on P1] Port 3 – 0.00 mg/L, Port 4 – 0.00 mg/L

Signature Leah Zogby Date 12/15/2020 – 12/21/2020

AECOM

Well ID: **PR79-BR-005**

Low Flow Ground Water Sample Collection Record

Client: USACE
Project No: 60608703
Site Location: Theodore Foster Road, Foster, RI
Weather Conds: 32° F, sunny

Date: 12/15/2020 – 12/21/2020
Time: Start 1305 am/pm 12/15
Finish 1210 am/pm 12/21
Collector(s): Leah Zogby (AECOM)

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 301 feet b. Water Table Depth 24 feet bgs c. Water Column (a-b) NA

d. Depth to Water in FLUTe line < 5 ft. e. Purge Pressure 64 psi f. Sample Pressure 47 psi

2. PORT DATA:

Port	Sampling Interval (ft BGS)	Pump Depth (ft BGS)	Purge Volume (Liters)	Sample Stroke Volume (Liters)	Min. Discard (Liters)	Initial (ft) → DTW @ 1301	Before 2nd Purge → DTW @ 1500	Before 3rd Purge → DTW @ 1305	4th DTW @ 1358
1	27.9-32.9	121	4.39	3.17	0.239	14.12	12.62	12.65	13.62
2	46.9-51.9	122	4.46	3.17	0.250	14.95	14.66	14.69	14.79
3	87.9-92.9	123	4.50	3.17	0.252	26.20	26.10	26.09	27.38
4	214.9-219.9	124	4.54	3.17	0.254	27.84	27.82	27.79	28.30
						12/15	12/15	12/16	12/16 AKB 10/20/21

a. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	09D100420
Turbidity Meter	Geotech	19092241

b. 1st Purge Time/Duration 1305 - 1311 6 min
c. 2nd Purge Time/Duration 1502-1508 7 min
d. 3rd Purge Time/Duration 1313 – 1320 7 min 12/16 AKB 10/20/21
e. 4th Purge Time/Duration 1401-1407 6 min 12/16 AKB 10/20/21

Port	Time (24hrs)	Purge Time (min)	pH	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	PID (ppm)	Color/Odor
1	1052	7	6.34	10.35	191	2.21	168.2	0.26	NM	None
2	1101	6	6.09	10.51	213	0.70	174.3	0.64	↓	↓
3	1109	6	6.04	10.68	200	0.45	170.6	2.34	↓	↓
4	1115	6	7.18	10.54	303	0.32	128.9	0.02	↓	↓

3. SAMPLE COLLECTION:

Sample ID	Analysis	Time
PR79-BR-005-P1-01	VOCs, VOCs SIM, SVOCs, metals (filtered and total), TOC, Diss. Gases, Anions, (Nitrate, Nitrite, Sulfate, Chloride), Alkalinity, Sulfide	1120 12/21
PR79-BR-005-P2-01	↓	1130 AKB 10/20/21
PR79-BR-005-P3-01	↓	1155
PR79-BR-005-P4-01	↓	1210
PR79-GW-FD05-01	↓	1125

Notes: Hach Colorimeter Test – Port 1: 0.03 mg/L, Port 2: 0.00 mg/L, Port 3: 0.00 mg/L, Port 4: 0.00 mg/L
[Field Duplicate taken on Port 1]

Signature Leah Zogby

Date 12/15/2020 – 12/21/2020

AECOM

Well ID: **PR79-BR-004**

Low Flow Ground Water Sample Collection Record

Client: USACE
Project No: 60608703
Site Location: Theodore Foster Road, Foster, RI
Weather Conds: 35°F, partly cloudy

Date: 12/15/2020 - 12/16/2020
Collector(s): Leah Zogby (AECOM)

Time: Start 1328 am/pm 12/15
Finish 1140 am/pm 12/16

1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)

a. Total Well Length 301 feet b. Water Table Depth 17 feet bgs c. Water Column (a-b) NA

d. Depth to Water in FLUTe liner < 5 ft. e. Purge Pressure 61 psi f. Sample Pressure 46 psi

2. PORT DATA:

Port	Sampling Interval (ft BGS)	Pump Depth (ft BGS)	Purge Volume (Liters)	Sample Stroke Volume (Liters)	Min. Discard (Liters)	Initial (ft) DTW @ 1326	Before 2nd Purge DTW @ 1421	Before 3rd Purge DTW @ 1524	4th DTW @ 0800
1	15.7-25.7	117	4.64	3.33	0.245	12.34	13.17	13.30	12.66 12/16 AKI 10/20/21

a. Field Testing Equipment used:

Make	Model	Serial Number
YSI	556 MPS	09D100420
Turbidity Meter	GeoTech	19092241

b. 1st Purge Time/Duration 1328 - ~~1334~~ 1334 6 min AKB 10/20/21
c. 2nd Purge Time/Duration 1421-1428 7 min
d. 3rd Purge Time/Duration 1524 - 1531 7 min
e. 4th Purge Time/Duration 0926-0933 7 min

Port	Time (24hrs)	Purge Time (min)	pH	Temp. (°C)	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	PID (ppm)	Color/Odor
1	1052	7	10.67	10.20	235	5.08	189.6	0.02	NM	clear

3. SAMPLE COLLECTION:

Sample ID	Analysis	Time
PR79-BR-004-P1-01	VOCs, VOCs SIM, SVOCs, metals (filtered and total), TOC, Diss. Gases, Anions, (Nitrate, Nitrite, Sulfate, Chloride), Alkalinity, Sulfide	1135 12/16 AKB 10/20/21
PR79-GW-FD04-01	↓	1140

Notes: Hach Colorimeter Test - Port 1 - 0.00 mg/L
Field Duplicate taken on Port 1.

Signature Leah Zogby

Date 12/15/2020 - 12/16/2020

Appendix F

Hydraulic Conductivity Results

AECOM
500 Enterprise Drive, Suite 1A
Rocky Hill, Connecticut 06067

860.263.5800 tel
860.263.5777 fax

Technical Memorandum

To	Gregory Hencir, Task Order Manager	Pages	2
CC	Rory Henderson, Senior Geoscientist		
Subject	Former NIKE PR-79 Control Area Foster, Rhode Island Hydraulic Conductivity Results		

From	Dave Estrella, P.E., Senior Engineer/Hydrogeologist
Date	July 20, 2021

AECOM performed slug testing at the Former NIKE PR-79 Control Area (Site) located in Foster, RI. Slug testing was conducted between November 19 and 25, 2020 to determine the hydraulic conductivity of the glacial till and weathered bedrock at the Site. Four monitoring wells were tested: PR79-MW-001, PR79-MW-002, PR79-MW-003, and PR79-MW-006 for a total of eight tests.

The monitoring wells are screened in the glacial till extending into weathered bedrock which is hydraulically connected. The bottom of the well screens coincide with competent bedrock representing the aquifer base. Well screens are 10 feet long extending from approximately 20 feet below ground surface (ft bgs) to 30 ft bgs, with the exception of PR79-MW-006 which is 9 feet and screened from 2 to 11 feet. Well construction information is presented in Table 1 for each tested well.

Falling head slug tests were performed using a pressure transducer that recorded groundwater levels once a slug had been introduced to each test well until the approximately 90% recovery was achieved. Usability of the datasets was evaluated using AQTESOLV software (Duffield, 2007). The hydraulic conductivity and specific storage values were estimated using the KGS model (Hyder, et al. 1994) by an AECOM hydrogeologist. Plausibility of the specific storage estimate can be used as a method to assess the influence of insufficient well development or vertical flow from above or below the well screen (Butler 1998). Typical specific storage values range from 1E-3 for sand to 1e-6 for fractured rock (Domenico &Mifflin, 1965). Because all specific storage values are reasonably close to expected values for either glacial till or weathered bedrock, no significant influence of either insufficient development or vertical flow is noted. Results of the AQETSOLV analyses are presented in Table 1. The geometric mean of hydraulic conductivity for all tests resulted in 0.31 ft/d with a specific storage value of 3.1E-4.

Table 1: Summary of Slug Test Analysis Results

Test Well	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Test #	Hydraulic Conductivity (ft/d)	Specific Storage (-)
MW-001	20.6	30.6	1	0.20	1.9E-06
MW-002	17	27	1	0.17	1.9E-04
			2	0.08	1.7E-04
			Geometric Mean	**0.12**	**1.8E-04**
MW-003	23	33	1	0.12	1.7E-04
			2	0.08	3.9E-04
			Geometric Mean	**0.10**	**2.6E-04**
MW-006	2	11	1	1.56	1.8E-03
			2	1.47	2.8E-03
			3	1.49	4.3E-03
			Geometric Mean	**1.50**	**2.8E-03**
		Geometric Mean of All Wells		**0.31**	**3.1E-04**

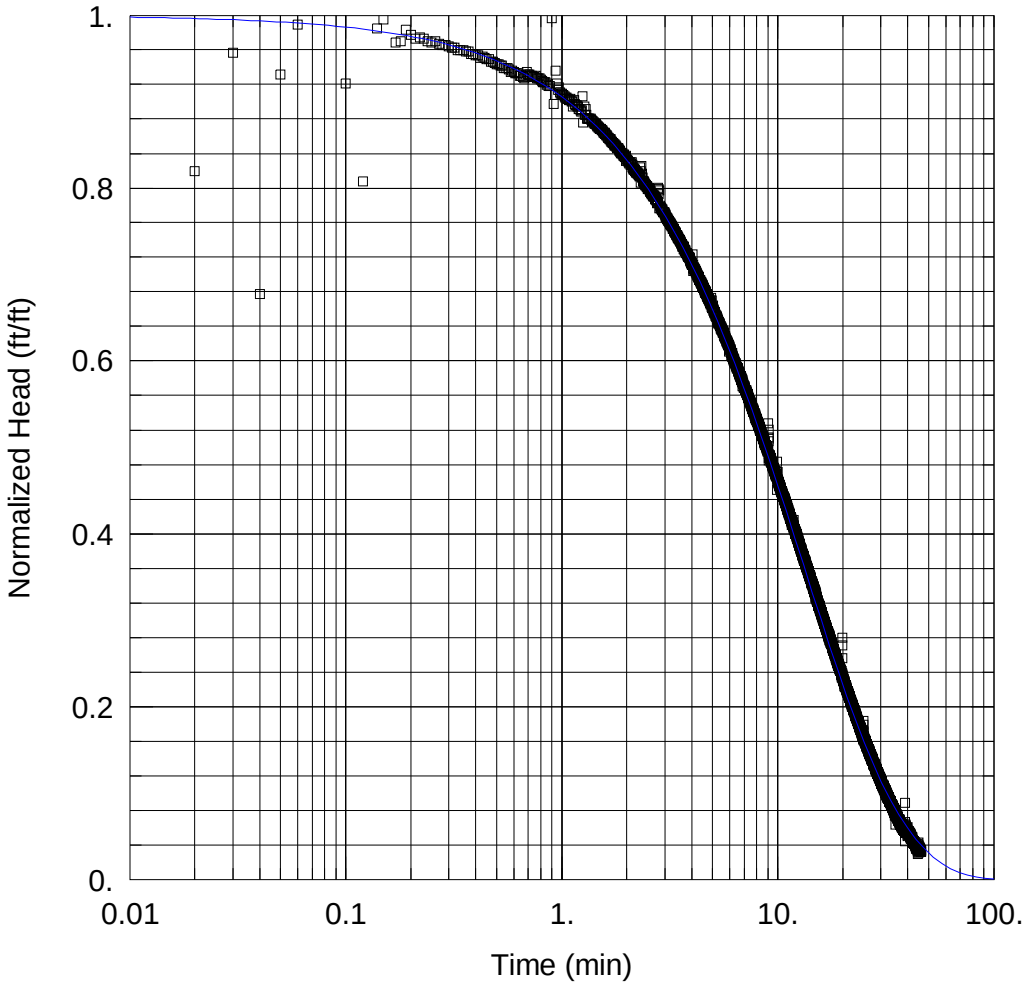
References

Butler. (1998). *The Design, Performance, and Analysis of Slug Tests.* Lewis Publishers.

Duffield, G. (2007). *AQTESOLV Version 4.50 - Professional.* HydroSOLVE, Inc.

Domenico, P., & Mifflin, M. (1965). Water from Low-Permeability Sediments and Land Subsidence. *Water Resources Research, 1*(4), 563-576

Hyder, Z., Butler Jr., J., McElwee, C. D., & Liu, W. (1994). Slug Tests in Partially Penetrating Wells. *Water Resources Research, 30*(11), 2945-2957.



PR-79 MW-001 TEST 1

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-001.aqt
Date: 03/18/21 Time: 11:34:15

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-001
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 13.69 ft

WELL DATA (MW-001)

Initial Displacement: 1.56 ft
Total Well Penetration Depth: 13.69 ft
Casing Radius: 0.08612 ft

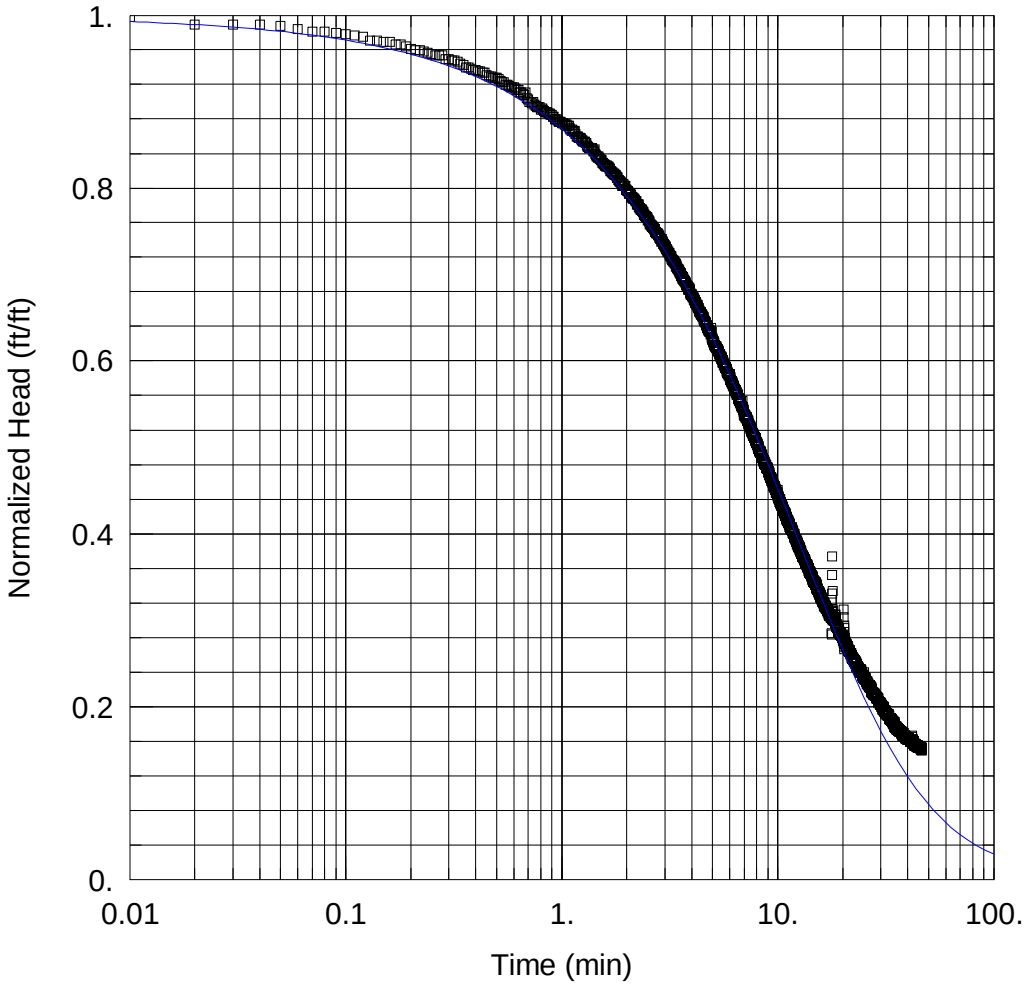
Static Water Column Height: 13.69 ft
Screen Length: 10. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 0.2022 ft/day
Kz/Kr = 0.1

Ss = 1.883E-6 ft^{-1}



PR-79 MW-002 TEST 1

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-002_Test_1.aqt
Date: 03/18/21 Time: 11:32:23

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-001
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 10.32 ft

WELL DATA (MW-002)

Initial Displacement: 1.5 ft
Total Well Penetration Depth: 10.32 ft
Casing Radius: 0.08612 ft

Static Water Column Height: 10.32 ft
Screen Length: 10. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

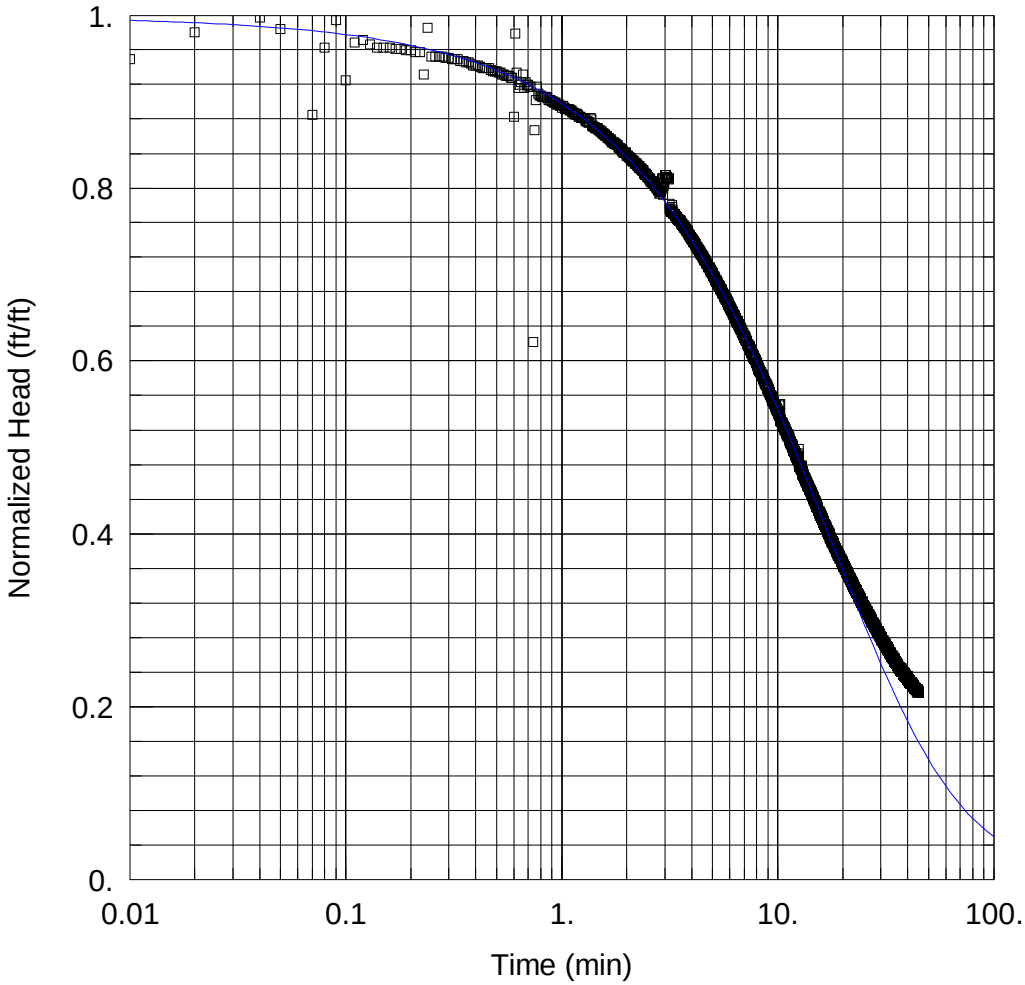
SOLUTION

Aquifer Model: Unconfined

Solution Method: KGS Model

Kr = 0.1166 ft/day
Kz/Kr = 0.1

Ss = 0.0001881 ft^{-1}



PR-79 MW-002 TEST 2

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-002_Test_2.aqt
Date: 03/18/21 Time: 11:46:02

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-002
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 10.32 ft

WELL DATA (MW-002)

Initial Displacement: 1.325 ft
Total Well Penetration Depth: 10.32 ft
Casing Radius: 0.08612 ft

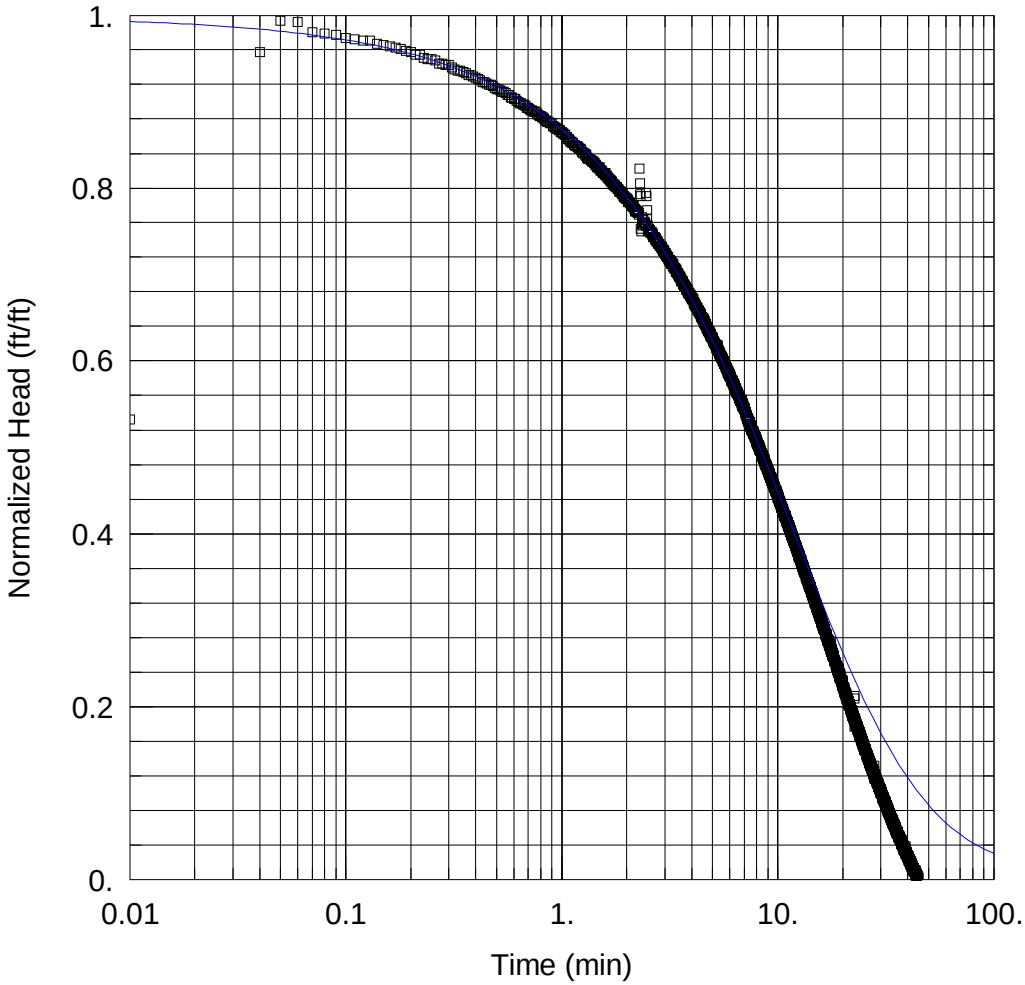
Static Water Column Height: 10.32 ft
Screen Length: 10. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 0.08429 ft/day
Kz/Kr = 0.1

Ss = 0.0001651 ft^{-1}



PR-79 MW-003 TEST 1

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-003_Test_1.aqt
Date: 03/18/21 Time: 12:02:36

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-003
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 15.07 ft

WELL DATA (MW-003)

Initial Displacement: 1.4 ft
Total Well Penetration Depth: 15.07 ft
Casing Radius: 0.08612 ft

Static Water Column Height: 15.07 ft
Screen Length: 10. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

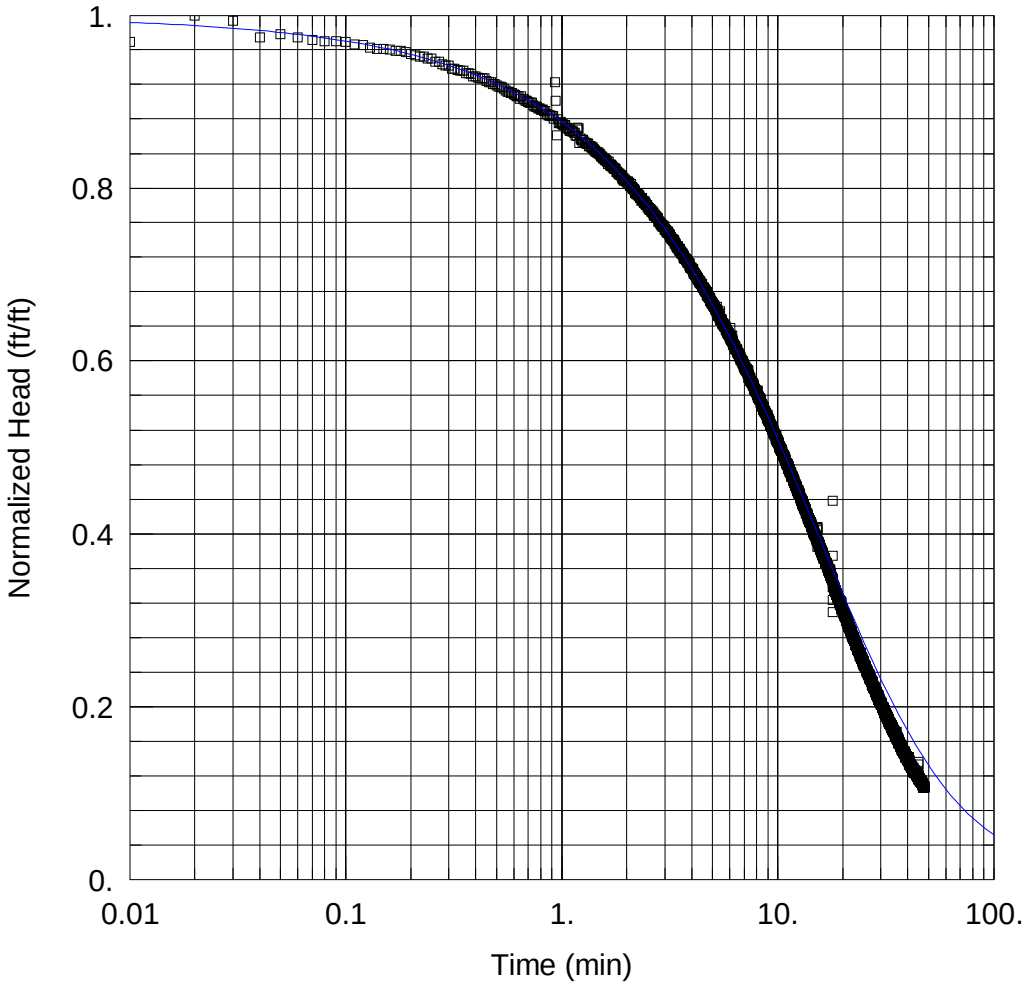
SOLUTION

Aquifer Model: Unconfined

Solution Method: KGS Model

Kr = 0.1202 ft/day
Kz/Kr = 0.1

Ss = 0.0001737 ft^{-1}



PR-79 MW-003 TEST 2

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-003_Test_2.aqt
Date: 03/18/21 Time: 12:10:43

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-003
Test Date: 11/19/2020

AQUIFER DATA

Saturated Thickness: 15.07 ft

WELL DATA (MW-003)

Initial Displacement: 1.8 ft
Total Well Penetration Depth: 15.07 ft
Casing Radius: 0.08612 ft

Static Water Column Height: 15.07 ft
Screen Length: 10. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

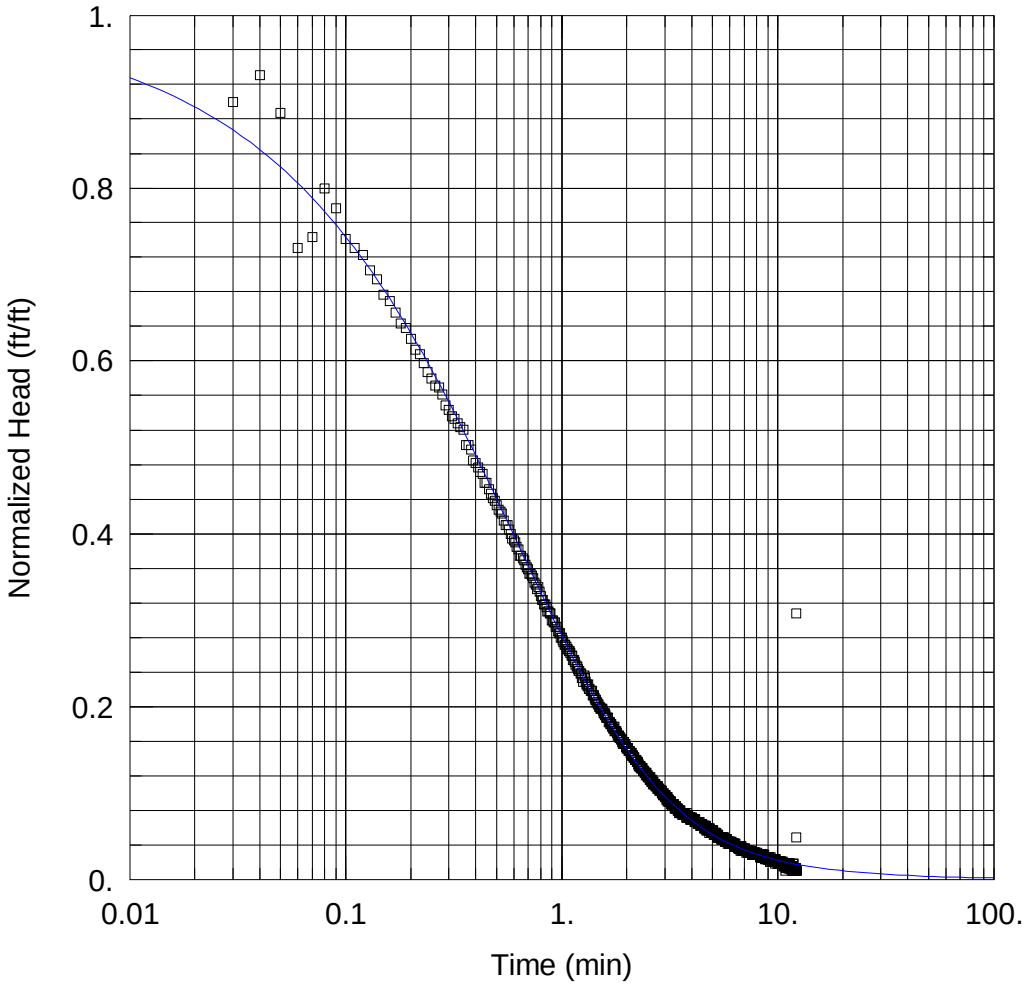
SOLUTION

Aquifer Model: Unconfined

Solution Method: KGS Model

Kr = 0.07957 ft/day
Kz/Kr = 0.1

Ss = 0.0003925 ft^{-1}



PR-79 MW-006 TEST 1

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-006_Test_1.aqt
Date: 03/18/21 Time: 12:38:35

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-006
Test Date: 11/25/2020

AQUIFER DATA

Saturated Thickness: 9.92 ft

WELL DATA (MW-006)

Initial Displacement: 0.9 ft
Total Well Penetration Depth: 9.92 ft
Casing Radius: 0.08612 ft

Static Water Column Height: 9.92 ft
Screen Length: 9. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

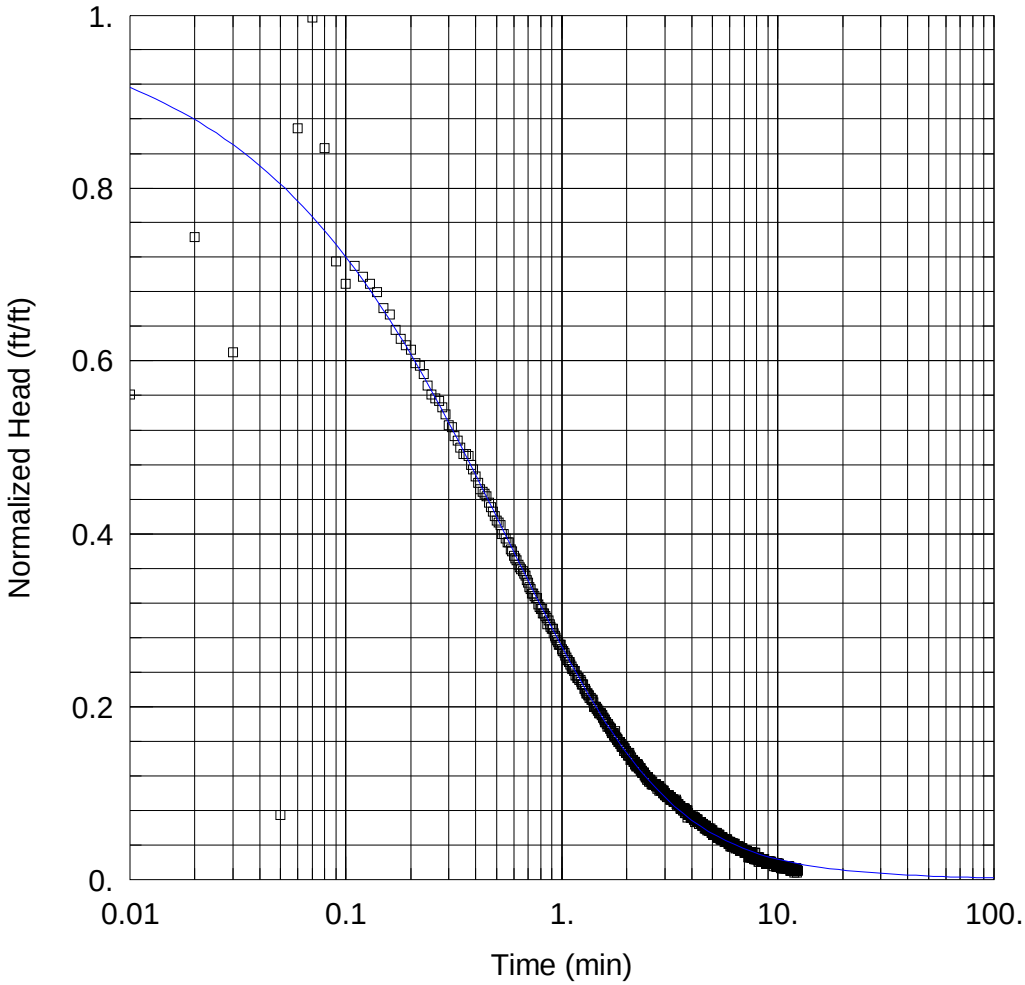
SOLUTION

Aquifer Model: Unconfined

Solution Method: KGS Model

Kr = 1.558 ft/day
Kz/Kr = 0.1

Ss = 0.00183 ft^{-1}



PR-79 MW-006 TEST 2

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-006_Test_2.aqt
Date: 03/18/21 Time: 12:39:02

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-006
Test Date: 11/25/2020

AQUIFER DATA

Saturated Thickness: 9.92 ft

WELL DATA (MW-006)

Initial Displacement: 0.9 ft
Total Well Penetration Depth: 9.92 ft
Casing Radius: 0.08612 ft

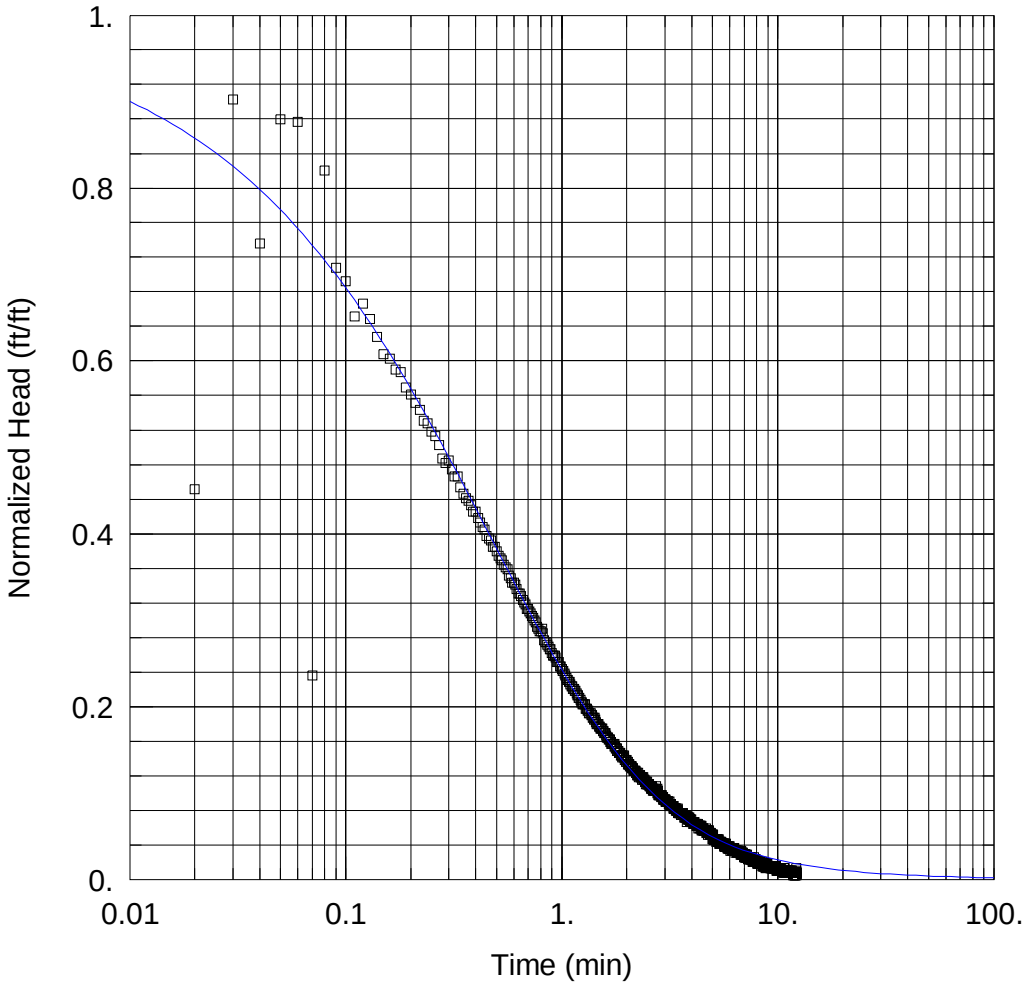
Static Water Column Height: 9.92 ft
Screen Length: 9. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 1.465 ft/day
Kz/Kr = 0.1

Ss = 0.002828 ft^{-1}



PR-79 MW-006 TEST 3

Data Set: C:\Users\dave.estrella\Documents\PR-59\AQTESOLV\PR-79_MW-006_Test_3.aqt
Date: 03/18/21 Time: 12:38:06

PROJECT INFORMATION

Company: AECOM
Client: USACE
Project: 60608703
Location: Foster, RI
Test Well: MW-006
Test Date: 11/25/2020

AQUIFER DATA

Saturated Thickness: 9.92 ft

WELL DATA (MW-006)

Initial Displacement: 0.9 ft
Total Well Penetration Depth: 9.92 ft
Casing Radius: 0.08612 ft

Static Water Column Height: 9.92 ft
Screen Length: 9. ft
Well Radius: 0.1667 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 1.486 ft/day
Kz/Kr = 0.1

Ss = 0.004266 ft^{-1}

Appendix G

Geophysical Logging Report (Hager-Ritcher Geosciences)

HAGER-RICHTER
GEOSCIENCE, INC.

BOREHOLE GEOPHYSICAL LOGGING REPORT
FORMER NIKE PR-79 CONTROL AREA
FOSTER, RHODE ISLAND

Prepared for:

AECOM
10 Orms Street, Suite 400
Providence, Rhode Island 02904

Prepared by:

Hager-Richter Geoscience, Inc.
8 Industrial Way – D10
Salem, New Hampshire 03079

File 19RG14
October 2021

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HAGER-RICHTER
GEOSCIENCE, INC.

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October 23, 2021
File 19RG14

Rory Henderson
AECOM
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Providence, Rhode Island 02904

Tel: 401.854.2840
Email: rory.henderson@aecom.com

RE: Borehole Geophysical Logging
Former NIKE PR-79 Control Area
Foster, Rhode Island

Dear Mr. Henderson:

In this report, we summarize the results of borehole geophysical logging conducted by Hager-Richter Geoscience, Inc. (HRGS) at the Former NIKE PR-79 Control Area (Site) located in Foster, Rhode Island for AECOM. The borehole geophysical logging program was conducted as part of an ongoing environmental investigation of the Site by AECOM for the USACE New England District. The scope of work for the borehole geophysical logging reported herein was specified by AECOM.

Introduction

AECOM requested borehole geophysical logging of five (5) boreholes in support of an ongoing environmental investigation of the Site. AECOM was interested in determining the depths and orientations (dip azimuths and dip angles) of bedrock fractures intersected by the logged boreholes and depths where water flows into and out of the boreholes under ambient and stressed (low constant rate pumping) conditions.

The borehole geophysical logging program, specified by AECOM, consisted of the following.

- Optical Televiewer (OTV)
- Acoustic Televiewer (ATV)
- Acoustic Caliper
- Natural Gamma Ray
- Electric Logs
    - Spontaneous Potential (SP)
    - Single Point Resistance (SPR)
    - Normal Resistivity (8-inch, 16-inch, & 32-inch electrode spacings)
- Fluid Temperature & Fluid Conductivity
- Heat Pulse Flow Meter (HPFM) Under Ambient & Pumping Conditions

The five (5) logged boreholes, identified as BR-001 to BR-005, were cased through the overburden with 6-inch steel casing and were 5-inch open-hole throughout the bedrock portions of the boreholes. The date logged, open-hole interval, ambient water level, and nominal open-hole diameter for each of the logged boreholes are reported in Table 1. The datum for depths in this report is the top of the 6-inch steel casing at the location of each borehole.

Table 1 - Borehole Information

Borehole ID (date logged)	Open-Hole Interval (feet)	Ambient Water Level (feet)	Nominal Open-Hole Diameter (inches)
BR-001 (July 6 & 7, 2020)	16.5 – 301.6	20.8	5
BR-002 (July 6 & 7, 2020)	34.5 – 303.0	22.5	5
BR-003 (July 7 & 8, 2020)	17.6 – 302.0	15.0	5
BR-004 (July 6 & 7, 2020)	17.0 – 307.7	15.1	5
BR-005 (July 7 & 8, 2020)	19.7 – 302.3	24.3	5

Objectives

The objectives of the borehole geophysical logging program were to determine the depths and orientations (dip azimuths and dip angles) of bedrock fractures intersected by the logged boreholes and depths where water flows into and out of the boreholes under ambient and stressed (low constant rate pumping) conditions.

Field Operations

Robert Garfield, P.G. and Nicholas DeCristofaro of HRGS conducted the field operations July 6-8, 2020. The project was coordinated with Mr. Gregory Hencir of AECOM and Mr. John Shannon of AECOM was on-site during field operation. Data analysis and interpretation were completed at the HRGS offices. Original data and field notes reside in the HRGS files and will be retained for at least three (3) years.

Equipment

General. A Mount Sopris Matrix portable digital logging system was used with a Mount Sopris 4MXA-1000 winch for the borehole geophysical logging. Data were displayed and recorded in the field in digital format using a laptop computer and were processed in the office.

Optical Televiewer. An ALT QL40-OBI-2G optical televiewer (OTV) probe was used for this project. The OTV acquires a high resolution, effectively continuous, magnetically oriented, 360° image of the borehole wall. The image can be used to characterize bedrock conditions including

determining the depths and orientations of bedrock structures such as fractures, foliation, and bedding and to provide information about lithology. The probe includes a 3-axis magnetometer and three accelerometers to orient the image and to provide borehole deviation data that are used to correct bedrock structure orientations from apparent to true orientations.

Acoustic Televiewer. An ALT QL40-ABI-2G acoustic televiewer (ATV) probe was used for this project. The ATV probe acquires a high resolution, effectively continuous, magnetically oriented, 360° image of the borehole wall using the reflected signal of sound waves in the ultrasonic frequency range. Both amplitude and travel time of the reflected signal are recorded and can be used to characterize bedrock conditions including determining the depths and orientations of bedrock structures such as fractures, foliation, and bedding and to provide information about lithology. The probe includes a 3-axis magnetometer and three accelerometers to orient the image and to provide borehole deviation data that are used to correct bedrock structure orientations from apparent to true orientations.

ATV travel time data can also be used to calculate an acoustic caliper log. The acoustic caliper log measures the average borehole diameter of the borehole. The acoustic caliper log is derived from the travel time data and the velocity of the acoustic signal in water. The acoustic caliper log is used to characterize changes in the borehole diameter due to open fractures, voids, weathered bedrock, and drilling changes.

Natural Gamma Ray. A Mount Sopris 2PGA-1000 poly-gamma probe was used for this project. The probe uses a sodium iodide crystal that produces a pulse of light when struck by a gamma ray. The variation of radioactivity naturally occurring in bedrock and sediment makes the natural gamma ray log an excellent indicator of changes in lithology. Radioactive minerals tend to accumulate in clays with the practical result that layers with higher clay content are commonly expressed in the natural gamma ray log as relatively higher counts per second (cps). Clean sands, which are normally low in radioactivity, produce low count rates.

Electric Logs. A Mount Sopris 2PEA-1000 poly-electric probe attached to a 2PGA-1000 poly-gamma probe was used for this project. The normal resistivity, SP, and SPR logs are types of electric logs. The electric logs are calculated from voltage and current measurements made with various combinations of a fixed electrode at the surface and one or more electrodes mounted on the downhole probe.

Resistivity is the physical property that relates electric current density to potential gradient and is defined as:

$$\rho = (A / L) * (V / I) \qquad \text{Eq. 1}$$

where:

ρ	is resistivity
A	is cross-sectional area of a homogeneous tube
L	is length of the tube
V	is potential
I	is current

Normal resistivity data are measured by applying an electric current and measuring the voltage between a pair of current and voltage downhole electrode arrays. The electrode spacing determines the effective distance of the measurement from the borehole wall. The effective sample interval for each pair of electrode spacings (8-inches 16-inches, and 32-inches) is usually considered to be a sphere with a diameter about two times the electrode spacing. Normal resistivity logs provide information about changes in the lithology of material (bedrock and/or soil) surrounding a borehole.

Spontaneous potential (SP) measures the voltage that occurs between the borehole fluid and the surrounding materials. Spontaneous potentials occur in the earth due to chemical and physical differences between rock types and saturating fluids. The SP data are the difference in potential (or voltage) between a fixed electrode at the surface and a single moving electrode in the borehole. SP logs are commonly used to identify changes in lithology and changes in the salinity of formation fluid under some conditions.

Single point resistance (SPR) measures the electric resistance of the material surrounding the borehole and saturating fluid. The SPR measurements are made by passing an alternating current between a surface electrode and an electrode on the probe. The resistance is calculated using the voltage between the two electrodes and Ohms Law, which is defined as:

$$R = E / I \qquad \text{Eq. 2}$$

where:

R	is resistance
E	is potential
I	is current

SPR data are useful in the determination of qualitative lithologic information, water quality, and location of fractures/fracture zones. The SPR values increase with increasing grain size and decrease with increasing borehole diameter, fracture density, and with higher concentrations of dissolved solids in the borehole fluid.

Fluid Temperature. A Mount Sopris QL40-FTC fluid temperature and conductivity/resistivity probe was used for this project. The temperature sensor is a semiconductor device for which the voltage output is linearly related to temperature. Fluid temperature logs record the temperature of the borehole fluid. If fluid temperature contrasts are present between the borehole fluid and fluid in individual fractures and fracture zones, the fluid temperature logs can be a useful indicator of flow into and out of a borehole.

Fluid Conductivity. A Mount Sopris QL40-FTC fluid temperature and conductivity/resistivity probe was used for this project. The probe uses an electrically shielded Wenner array to measure the capacity of the borehole fluid to transmit electric current and can be used as an indicator of salinity and water quality. If fluid conductivity/resistivity contrasts are present between the borehole fluid and fluid in individual fractures and fracture zones, the fluid conductivity/resistivity logs can also be a useful indicator of flow into and out of a borehole.

Resistivity, as defined in Equation 1, also applies to fluid resistivity. Conductivity is the inverse of resistivity

Heat Pulse Flow Meter. A Mount Sopris HFP-2293 heat pulse flow meter (HPFM) was used for this project. The HPFM measures the vertical rate and direction of fluid flow in a borehole at discrete depths and is designed to be used for boreholes with flow rates less than 1.0 gallon per minute (gpm). A heating grid heats a thin sheet of water in a short time interval (less than 0.05 seconds), and if vertical flow is present, the sheet of water moves up or down the borehole in the direction of flow. Temperature sensors located at known distances above and below the heating grid monitor the differential temperature of the borehole fluid. The time required for the sheet of heated water to reach one of the sensors is measured, and based on factory calibrations, the time is used to calculate the vertical flow rate in gpm. Depths where water flows into and out of the borehole can be interpreted based on changes in the vertical flow rate and/or direction. HPFM measurements can be made under ambient conditions and under stressed (pumping or injection) conditions.

Measurement depths are selected based on information provided by other borehole geophysical data such as OTV, ATV, fluid temperature, and fluid conductivity. To make a measurement, the probe is positioned at a selected depth, with centralizers and flow diverters installed properly on the probe for the borehole diameter being investigated, and the probe is stabilized by the friction between the centralizers and diverters and the borehole wall. When the borehole fluid has stabilized after the disturbance caused by the probe being moved to the measurement depth, the heating grid is fired, and a measurement cycle starts. Multiple measurements are conducted at each test depth.

Limitations of the Methods

General. With the 4MXA-1000 winch, the logging cable passes over a calibrated wheel, and an encoder counts the revolutions, which are converted to depth. Slippage of the logging cable may

occur, resulting in errors in the recorded depths. At the beginning and end of a logging run, fiducial depths (commonly ground surface or top of casing) are measured and are compared to determine if slippage occurred.

Optical Televiewer. The OTV logs can be acquired in both air-filled and optically clear fluid-filled portions of boreholes. If the borehole is water-filled, the clarity of the water directly affects the quality of the OTV image. The OTV probe must be centralized in the borehole to acquire optimal OTV images. If the borehole wall is rough and/or irregular or the diameter of the open borehole is larger than the diameter of the casing, the probe may not be adequately centralized, and the quality of the OTV images may be compromised.

The accuracy of the orientation measured by the OTV, as stated by the manufacturer, is ±0.5° for the inclination data and ±1° for the azimuth data. The televiewers rely on the earth's magnetic field to determine azimuth. Therefore, in areas where the magnetic field may be significantly affected by local magnetic objects, the accuracy of dip azimuths reported in the logs may be reduced. Specifically, the dip azimuth data of bedrock structures and the borehole deviation data within approximately 5 feet of steel casing are not as accurate. However, the depth and dip angle of bedrock structures within approximately 5 feet of steel casing are accurate.

Acoustic Televiewer. ATV logging can only be conducted in fluid-filled portions of the boreholes. However, the fluid does not have to be optically clear. The ATV probe must be centralized in the borehole to acquire optimal ATV images. If the borehole wall is rough and/or irregular or the diameter of the open borehole is larger than the diameter of the casing, the probe may not be adequately centralized, and the quality of the ATV images may be compromised.

The accuracy of the orientation measured by the ATV, as stated by the manufacturer, is ±0.5° for the inclination data and ±1° for the azimuth data. The televiewers rely on the earth's magnetic field to determine azimuth. Therefore, in areas where the magnetic field may be significantly affected by local magnetic objects, the accuracy of dip azimuths reported in the logs may be reduced. Specifically, the dip azimuth data of bedrock structures and the borehole deviation data within approximately 5 feet of steel casing are not as accurate. However, the depth and dip angle of bedrock structures within approximately 5 feet of steel casing are accurate.

The acoustic caliper data are unlikely to indicate the presence of fractures with small aperture and/or steeply dipping fractures. Steeply dipping fractures with large aperture may show small enlargements in the caliper log at both the top and bottom of the intersection of the fracture with the borehole wall. It also may be difficult to identify fractures in the caliper log located near the bottom of casing where an enlargement commonly occurs and may be due to causes other than natural fractures.

Natural Gamma Ray. Natural gamma ray data can be acquired in air-filled and fluid-filled boreholes and in un-cased, PVC-cased, and steel-cased boreholes. However, if fluid or casing is present, the fluid and/or casing can attenuate the natural gamma rays, and, therefore, lower values are measured than if the borehole was air-filled and/or un-cased. According to the manufacturer's specifications, the measurement range is 0 cps to 100,000 cps, the accuracy is

±1% of full scale, and the resolution is 0.02% of full scale. The natural gamma ray data are not hold quantitative value in terms of geologic properties.

Electric Logs. All electric can only be conducted in fluid-filled portions of the boreholes. The borehole must be un-cased, and if steel casing is present, data cannot be acquired within approximately 10 to 30 feet of the bottom of steel casing for normal resistivity and data cannot be acquired within approximately 2 to 15 feet of the bottom of steel casing for SP and SPR.

According to the manufacturer's specifications, the normal resistivity measurement range is 0 ohm-m to 2,500 ohm-m, the accuracy is 1% of full scale, and the resolution is 0.02% of full scale. Normal resistivity logs can be affected by the resistivity of the drilling fluid. In addition, in extremely resistive formations, the data might exhibit artificially negative resistivity values because of the probe's inability to measure extremely high resistivity.

According to the manufacturer's specifications, the SP measurement range is -1,500 mV to 1,500 mV, the accuracy is 1% of full scale, and the resolution is 0.02% of full scale. According to the manufacturer's specifications, the SPR measurement range is 1 ohm to 5,000 ohms, the accuracy is 1% of full scale, and the resolution is 0.02% of full scale. Borehole diameter changes can have a significant impact on the data. The depth resolution of the SPR data is approximately equal to the diameter of the borehole. SPR data do not have a quantitative value in terms of geologic properties.

Fluid Temperature. Fluid temperature logging requires that fluid be present in the portion of the borehole to be logged. According to the manufacturer's specifications, the measurement range is -20° C to 80° C, the accuracy is better than ±1%, and the resolution is 0.01° C. Temperature logging is ineffective for accurately measuring the formation fluid temperature unless the borehole fluid is at equilibrium after disturbances such as drilling. A contrast in temperature must be present between the borehole fluid and fluid in individual fractures and fracture zones to detect flow into and out of a borehole from hydraulically transmissive bedrock fractures.

Fluid Conductivity. Fluid conductivity logging requires that fluid be present in the portion of the borehole to be logged. According to the manufacturer's specifications, the measurement range is 50 uS/cm to 30,000100 uS/cm, the accuracy is better than ±1%, and the resolution is 0.05%. A contrast in fluid conductivity must be present between the borehole fluid and fluid in individual fractures and fracture zones to detect flow into and out of a borehole from hydraulically transmissive bedrock fractures.

Heat Pulse Flow Meter. The HPFM testing requires that fluid be present in the portion of the borehole to be logged. According to the manufacturer's specifications for the HPFM, the calibrated measuring range is 0.03 to 1.0 gpm, the accuracy is ±5% for the mid-range, increasing to ±15% for the extremes of the range, and the resolution is 5%. Data below the stated calibration range are reported down to a flow rate of 0.01 gpm when such data are repeatable. Although the accuracy of such data may be low, non-zero values indicate that flow is occurring and indicate the direction of flow. The HPFM probe measures the difference in temperature between the upper and lower temperature sensors. In the absence of flow, the thermal pulse would move symmetrically out from the grid, affecting the two sensors equally as a function of

time. Therefore, the conductive or convective dissipation of the heat pulse would yield a zero value in the absence of flow.

Field Procedures & Data Acquisition

General. The depth encoder calibrations are regularly checked compared to a tape measure. In the field, adequate tension was maintained with the logging cable during the borehole geophysical logging and the depth encoder was cleaned after each logging run to maintain accurate depth measurements. Repeat sections were acquired to verify depth consistency. In addition, at the beginning and end of a logging run, a fiducial depth (top of casing or ground surface) was measured and checked for consistency. Recorded depths of fixed features in the borehole (i.e., reported casing lengths and reported borehole depths) were also checked for depth consistency. Based on field observations and comparison of repeat data, instrument drift was not observed.

The borehole geophysical logging equipment were decontaminated prior to first use and after logging each borehole. The downhole equipment was decontaminated by rinsing with an Alconox and water solution followed by rinsing with water.

The borehole geophysical logging sequence and the data acquisition parameters for the logged boreholes are reported in Table 2.

Table 2 – Data Acquisition Parameters

Log	Sampling Interval	Logging Speed	Logging Direction
1. Fluid Temp. & Fluid Cond.	0.1 feet	8-12 feet/minute	down & repeat up
2. OTV	0.01 feet	8-12 feet/minute	down & repeat up
3. ATV & Acoustic Caliper	0.01 feet	8-10 feet/minute	down & up
4. Nat. Gamma & Electric Logs	0.1 feet	8-15 feet/minute	down & up
5. HPFM Under Ambient Cond.	HPFM data were acquired at discrete depths under ambient conditions.		
6. HPFM Under Pumping Cond.	HPFM data were acquired at discrete depths while water was pumped from each borehole at a low constant rate.		

Optical & Acoustic Televiewer. The orientation sensors in the OTV and ATV probes are regularly checked for tilt and azimuth calibrations using a compass and a calibration tube. To verify consistency of the televiewer images and orientations, the data from the OTV and ATV, two independent probes, are compared to each other for consistency. In addition, repeat sections are also acquired in each borehole. Based on field observations and comparison of repeat data, instrument drift was not observed.

Acoustic Caliper. The borehole diameter measurements are calibrated regularly in PVC tubes of known diameter and the measurements are checked in the field in portions of the boreholes with known diameters such as in the casing. Based on field observations and comparison of repeat data, instrument drift was not observed.

Natural Gamma Ray. To verify consistency, repeat sections are acquired for the full length of each borehole. Natural gamma ray readings for interfaces in the borehole (cased to open-hole, water-filled to air-filled) are monitored to evaluate the performance of the probe and probe sensors. Based on field observations and comparison of repeat data, instrument drift was not observed.

Electric Logs. The normal resistivity, SP, and SPR probe's factory calibrations are regularly checked using a Mount Sopris 4RSP-1000 calibration box. To verify consistency, logs were acquired while logging down and up the full length of the boreholes. Normal resistivity, SP, and SPR readings for interfaces in the borehole (cased to open-hole, water-filled to air-filled) were monitored to evaluate the performance of the probe and probe sensors. Normal resistivity, SP, and SPR data were compared to OTV, ATV, and natural gamma ray data to check for consistent observations of lithologic variation. Based on field observations and comparison of repeat data, instrument drift was not observed.

Fluid Temperature & Fluid Conductivity. To verify consistency, repeat sections are acquired for the full length of each borehole. The fluid temperature sensor and fluid conductivity sensor calibrations are also regularly checked compared to independent temperature and conductivity probes. Performance tests are also conducted on the fluid temperature and conductivity sensors in the field by observing changes in the data at the air-filled to water-filled interface in the borehole. Based on field observations and comparison of repeat data, instrument drift was not observed.

Heat Pulse Flow Meter. HPFM calibrations are regularly checked using a calibration flow tube. The borehole flow rates are checked in the field in portions of the boreholes with known flow, such as in the casing when the water level is static or in the casing under known pumping conditions. To verify consistency, multiple measurements are made at each sample depth. Based on field observations and comparison of repeat data, instrument drift was not observed.

To ensure reliable HPFM measurements, the borehole water level is monitored and recorded throughout the HPFM testing. For the HPFM logging under pumping conditions, water was pumped from the logged borehole being tested from within the casing, it the water level was in the casing, or near the top of the water if the water was below the bottom of casing. Water was pumped at a low constant rate under one gpm. The pump rate was monitored at the time of logging with a rotameter to ensure a constant pumping rate throughout the HPFM testing. In addition, HPFM measurements were not started until a stable pump rate was achieved and the borehole water level had stabilized or come to a low steady head change. This procedure ensured

that the stress from pumping was generating water from hydraulically transmissive bedrock fractures and not from borehole storage, water stored in the wellbore.

Data Processing

The processing consists mainly of selecting scales, filters, and the layout of the tracks. In addition, the OTV and ATV data require determining the depth, orientation, and category of the bedrock structures detected. To increase the quality of the OTV images, the brightness and contrast of the images were adjusted. To increase the quality of the ATV images, the ATV travel time images were digitally centralized. The ATV amplitude images can be normalized, although normalization was not applied to the ATV amplitude data for this project.

Data Interpretation & Presentation

Bedrock Structure Interpretation & Presentation. Bedrock fractures can be identified based on the OTV images, ATV amplitude images, ATV travel time images, and supported by the acoustic caliper data. Some of the criteria for identifying and characterizing bedrock fractures based on the OTV and ATV data require a judgment by the log analyst and different log analysts may make different interpretations. Bedding, foliation, veins, and other planar geologic features in the bedrock may appear similar to bedrock fractures in the borehole geophysical logging data and may be interpreted differently by different log analysts.

Bedrock fractures detected in the televiewer (OTV & ATV) data are grouped into three categories (Fracture Rank 1, Fracture Rank 2, and Fracture Rank 3) and are shown as color-coded lines and symbols on the borehole geophysical logs in the structure projection tracks and tadpole plots. The Key to Bedrock Structure Categories Figure (Figure 1) describes the bedrock structure categories and associated colors and tadpole shapes. The Tadpole Explanation Figure (Figure 2) explains how to "read" the tadpole plots. The Fracture Rank 1 category consists of minor fractures that are not distinct and may not be continuous around the borehole. The Fracture Rank 2 category consists of intermediate fractures that are distinct and continuous around the borehole with little or no apparent aperture. The Fracture Rank 3 category consists of major fractures that are distinct and continuous around the borehole with apparent aperture.

The datum for depths in this report is the top of the 6-inch steel casing at the location of each borehole. The depths of bedrock fractures are reported as the average depths of the top and bottom intersections of the bedrock fractures and the borehole wall. The orientations of bedrock fractures are reported as the dip azimuth (dip direction) and dip angle of each fracture, as shown in the Televiewer Explanation Figure (Figure 3). The OTV, ATV, and bedrock fracture dip azimuth data are referenced to true north using a magnetic declination of 14.0° west and the bedrock fractures dip angle data are reported from horizontal. Please note that the bedrock fractures dip azimuth data are perpendicular to strike as used commonly by geologists.

The structure projection plots, sinusoidal curves in the log track labeled Structure Projection, display the depth, orientation, and category of the bedrock structures detected in the televiewer data. Bedrock structures are essentially planar for short distances such as the intersection of the open borehole and the bedrock structure. The intersection of a plane, the bedrock structure, with

a cylinder, the borehole, is a circle on the plane. When the circle is unwrapped and plotted as it is in the structure projection plots, the circle plots as a sine wave as shown in Figure 3. The structures plotted in the structure projection plots are not corrected for borehole deviation. Therefore, the orientations of the structures are referred to as apparent orientations (that is, *apparent* dip angle and *apparent* dip azimuth). The true orientation (that is, *true* dip angle and *true* dip azimuth) of the detected bedrock structures are shown in the log track labeled Tadpole Plot. The correction from apparent to true orientation is made using the borehole deviation data acquired by the televiewer probes.

The tadpole plots are created from the structure projection plots after the data are corrected from apparent to true dip azimuth and dip angle as previously discussed. The tadpole plots graphically display the depth, orientation, and category of the bedrock structures interpreted from the televiewer images. The orientations of bedrock structures are graphically displayed on the tadpole plots by a tadpole consisting of a circle, the head, and a line, the tail. The position of the head, left to right on the tadpole plot, gives the dip angle of the bedrock structure. The left side of the track indicates a dip angle of 0° from horizontal, a horizontal structure, and the right side of the track indicates a dip angle of 90° from horizontal, a vertical structure. The position of the tail gives the dip azimuth of the bedrock structure and can be read like a compass. The tail pointing directly up is 0° north. We note explicitly that dip azimuth is perpendicular to strike as the term is used by geologists.

Presentation of the Borehole Geophysical Logging Results.

The borehole geophysical logging results consist of the following for each of the logged boreholes.

Borehole Image Logs – The borehole image logs are provided at a scale of 1-inch to 1.5-feet, are meant to be printed on portrait 11” x 17” paper, and consist of the following.

Track #	Log & Description
1.	OTV Image
2.	Depth
3.	ATV Amplitude
4.	ATV Travel Time
	Structure Projection – bedrock structure interpretation plotted in projection view
5.	Acoustic Caliper – borehole diameter in inches
	Tadpole Plot – bedrock structure interpretation plotted as tadpoles
6.	OTV Virtual Core
7.	Depth
8.	ATV Virtual Core

Borehole Geophysical Logs – The borehole geophysical logs are provided at a scale of 1-inch to 10-feet, are meant to be printed on portrait 11” x 17” paper, and consist of the following.

Track #	Log & Description
1.	OTV Image
2.	Depth
3.	ATV Amplitude
4.	Acoustic Caliper – borehole diameter in inches
	Tadpole Plot – bedrock structure interpretation plotted as tadpoles
5.	Natural Gamma Ray, SP, SPR
6.	Normal Resistivity (8-inch, 16-inch, 32-inch electrode spacings)
7.	Depth
8.	Fluid Temperature & Fluid Conductivity
9.	HPFM Under Ambient & Pumping Conditions
	Borehole Flow Interpretation

Summary of Borehole Flow Tables – The summary of borehole flow tables each summarize the borehole flow conditions in each borehole individually, are meant to be printed on standard portrait 8.5” x 11” paper, and consists of the following.

Track #	Log & Description
1.	Depth
2.	Borehole Flow Results & Interpretation

Bedrock Fracture Statistics Plots – The statistics plots include all detected bedrock fractures in each borehole individually and from all the logged boreholes combined, are meant to be printed on landscape 11” x 17” paper, and consist of the following.

Track #	Log & Description
1.	Stereogram of Fractures – poles of fractures plotted on an equal area lower hemisphere stereogram
2.	Contoured Stereogram of Fractures – contours of poles of fractures plotted on an equal area lower hemisphere stereogram
3.	Dip Azimuth Rose Diagram of Fractures
4.	Dip Angle Histogram of Fractures

Tables of Bedrock Fractures – The tables include all the detected bedrock fractures from each borehole individually, are meant to be printed on standard portrait 8.5" x 11" paper, and consist of the following.

Track #	Log & Description
1.	Depth
2.	Bedrock Fracture Dip Azimuth
3.	Bedrock Fracture Dip Angle
4.	Bedrock Fracture Category

Integrated Borehole Logs – The integrated borehole logs are provided at a scale of 1-inch to 10-feet, are meant to be printed on portrait ARCH-C paper, and consist of the following.

Track #	Log & Description
1.	Depth
-	*Tracks 2-8 – Borehole Geophysical Logging Results*
2.	OTV Image
3.	ATV Amplitude
4.	Acoustic Caliper – borehole diameter in inches Tadpole Plot – bedrock structure interpretation plotted as tadpoles
5.	Natural Gamma Ray, SP, SPR
6.	Normal Resistivity (8-inch, 16-inch, 32-inch electrode spacings)
7.	Fluid Temperature & Fluid Conductivity
8.	HPFM Under Ambient & Pumping Conditions Borehole Flow Interpretation
9.	Depth
10.	Elevation (NAVD88) – top of casing elevations were provided by AECOM
-	*Tracks 11 & 12 – Transmissivity Results*
11.	FLASH Transmissivity
12.	FLUTe Transmissivity – reported in 1-foot intervals
-	*Tracks 13 – FACT Sampling Results*
13.	TCE, m&p-Xylene, Ethylbenzene
14.	Final FLUTE Construction

The FLASH Transmissivity Results, FLUTe Transmissivity Results, FACT Sampling Results, and the Final FLUTe Construction details were provided by AECOM and presented on the Integrated Borehole Logs by HRGS.

Results

General. The borehole geophysical logs are given in Appendix 1, the summary of borehole flow tables are given in Appendix 2, the bedrock fracture statistics plots are given in Appendix 3, the tables of bedrock structures are given in Appendix 4, and the integrated borehole logs are given in Appendix 5. The five (5) logged boreholes, identified as BR-001 to BR-005, were cased through the overburden with 6-inch steel casing and were 5-inch open-hole throughout the

bedrock portions of the boreholes. The date logged, open-hole interval, ambient water level, and nominal open-hole diameter for each of the logged boreholes are reported in Table 1. The datum for depths in this report is the top of the 6-inch steel casing at the location of each borehole. The OTV, ATV, and bedrock fracture dip azimuth data are referenced to true north using a magnetic declination of 14.0° west and the bedrock fractures dip angle data are reported from horizontal.

BR-001. Vertical flow was not detected in borehole BR-001 with the HPFM under ambient conditions. However, flow was detected in the borehole with the HPFM under stressed conditions. The HPFM data acquired under stressed conditions were acquired while water was pumped from the borehole with a pump set near the top of the water column in the borehole. Table 3 below summarizes the borehole flow conditions in BR-001 at the time of logging, specifically the approximate depths and rates where flow was detected with the HPFM into and up the borehole from hydraulically transmissive fractures under pumping conditions.

Table 3 – BR-001 Summary of Borehole Flow

Depth (Feet)	Comments (flow was not detected in the borehole under ambient conditions)
16.5	Bottom of the 6-Inch Steel Casing
20.8	Ambient Water Level
20.8 - 25.0	no flow detected above the pump under pumping conditions
25.0 - 26.0	Location of Pump for HPFM Under Pumping Conditions
26.0 - 31.9	flow up the borehole at 0.08 gpm under pumping conditions
31.9 - 32.3	minor flow into & up the borehole under pumping conditions
32.3 - 38.5	flow up the borehole at 0.06 gpm under pumping conditions
38.5 - 40.5	minor flow into & up the borehole under pumping conditions
40.5 - 55.1	flow up the borehole at 0.04 gpm under pumping conditions
55.1 - 58.0	minor flow into & up the borehole under pumping conditions
58.0 - 68.9	flow up the borehole at 0.02 gpm under pumping conditions
68.9 - 71.1	minor flow into & up the borehole under pumping conditions
71.1 - 104.1	flow up the borehole at 0.01 gpm under pumping conditions
104.1 - 104.6	minor flow into & up the borehole under pumping conditions
104.6 - 302.0	no flow detected under pumping conditions
302.0	Bottom of the Borehole (based on the geophysical logging)

During HPFM logging under pumping conditions in borehole BR-001, water was pumped from the top of the water column at a rate of approximately 0.25 gpm. The total drawdown during HPFM logging was 7.0 feet, but the water was still drawing down at a rate of approximately 0.10 feet/minute during HPFM testing under pumping conditions.

BR-002, BR-003, BR-005. Vertical flow was detected in boreholes BR-002, BR-003, and BR-005 with the HPFM under both ambient and stressed conditions. The HPFM data acquired under stressed conditions were acquired while water was pumped from each borehole with a pump set

near the top of the water column in each borehole. Tables 4-6 below summarize the borehole flow conditions in each borehole at the time of logging, specifically the approximate depths and rates where flow was detected with the HPFM into and out of the boreholes from hydraulically transmissive fractures under ambient and pumping conditions.

Table 4 – BR-002 Summary of Borehole Flow

Depth (Feet)	Comments
22.5	Ambient Water Level
15.0 - 16.0	no flow detected in the casing under ambient conditions no flow detected in the casing above the pump under pumping conditions
16.0 - 17.0	Location of Pump for HPFM Under Pumping Conditions
17.0 - 17.6	no flow detected in the casing under ambient conditions flow up the borehole in the casing at 0.08 gpm under pumping conditions
34.5	Bottom of the 6-Inch Steel Casing
34.5 - 36.3	no flow detected under ambient conditions flow up the borehole in the casing at 0.08 gpm under pumping conditions
36.3 - 42.0	flow into & down the borehole under ambient conditions flow into & up the borehole under pumping conditions
42.0 - 67.9	flow down the borehole at 0.07 gpm under ambient conditions flow up the borehole at 0.04 gpm under pumping conditions
67.9 - 68.5	flow into & up of the borehole under pumping conditions
68.5 - 95.1	flow down the borehole at 0.07 gpm under ambient conditions no flow detected under pumping conditions
95.1 - 96.8	flow out of the borehole under ambient conditions
96.8 - 303.0	no flow detected under ambient conditions no flow detected under pumping conditions
303.0	Bottom of the Borehole (based on the geophysical logging)

During HPFM logging under pumping conditions in borehole BR-002, water was pumped from the top of the water column at a rate of approximately 0.25 gpm. The total drawdown during HPFM logging was 4.2 feet, but the water was still drawing down at a rate of approximately 0.08 feet/minute during HPFM testing under pumping conditions.

Table 5 – BR-003 Summary of Borehole Flow

Depth (Feet)	Comments
15.0	Ambient Water Level
15.0 - 16.0	no flow detected in the casing under ambient conditions no flow detected in the casing above the pump under pumping conditions
16.0 - 17.0	Location of Pump for HPFM Under Pumping Conditions
17.0 - 17.6	no flow detected in the casing under ambient conditions flow up the borehole in the casing at 0.15 gpm under pumping conditions
17.6	Bottom of the 6-Inch Steel Casing
17.6 - 19.7	flow into & down the borehole under ambient conditions flow into & up & flow into & down the borehole under pumping conditions
19.7 - 53.4	flow down the borehole at 0.03 gpm under ambient conditions flow down the borehole at 0.02 gpm under pumping conditions
53.4 - 55.5	minor flow out of the borehole under ambient conditions
55.5 - 74.2	flow down the borehole at 0.02 gpm under ambient conditions flow down the borehole at 0.02 gpm under pumping conditions
74.2 - 76.1	minor flow out of the borehole under ambient conditions minor flow out of the borehole under pumping conditions
76.1 - 285.5	flow down the borehole at 0.01 gpm under ambient conditions flow down the borehole at 0.01 gpm under pumping conditions
285.5 - 286.7	minor flow out of the borehole under ambient conditions minor flow out of the borehole under pumping conditions
286.7 - 302.0	no flow detected under ambient conditions no flow detected under pumping conditions
302.0	Bottom of the Borehole (based on the geophysical logging)

During HPFM logging under pumping conditions in borehole BR-003, water was pumped from the top of the water column at a rate of approximately 0.25 gpm. The total drawdown during HPFM logging was 2.0 feet, but the water was still drawing down at a rate of approximately 0.03 feet/minute during HPFM testing under pumping conditions.

Table 6 – BR-005 Summary of Borehole Flow

Depth (Feet)	Comments
19.7	Bottom of the 6-Inch Steel Casing
19.7 - 23.6	flow into & down the borehole under ambient conditions from above the flow into & down the borehole under pumping conditions from above the
23.6	Ambient Water Level
23.6 - 27.0	flow down the borehole at 0.05 gpm under ambient conditions flow down the borehole above the pump under pumping conditions
27.0 - 28.0	Location of Pump for HPFM Under Pumping Conditions
28.0 - 31.9	flow down the borehole at 0.05 gpm under ambient conditions flow up the borehole at 0.14 gpm under pumping conditions
31.9 - 34.7	flow into & down the borehole under ambient conditions flow into & up the borehole under pumping conditions
34.7 - 51.7	flow down the borehole at 0.10 gpm under ambient conditions flow up the borehole at 0.10 gpm under pumping conditions
51.7 - 52.3	flow into & up & flow into & down the borehole under pumping conditions
52.3 - 92.6	flow down the borehole at 0.10 gpm under ambient conditions flow down the borehole at 0.06 gpm under pumping conditions
92.6 - 93.5	flow out of the borehole under ambient conditions flow out of the borehole under pumping conditions
93.5 - 193.3	flow down the borehole at 0.04 gpm under ambient conditions flow down the borehole at 0.03 gpm under pumping conditions
193.3 - 194.3	minor flow out of the borehole under ambient conditions
194.3 - 219.0	flow down the borehole at 0.03 gpm under ambient conditions flow down the borehole at 0.03 gpm under pumping conditions
219.0 - 221.1	flow out of the borehole under ambient conditions flow out of the borehole under pumping conditions
221.1 - 302.3	no flow detected under ambient conditions no flow detected under pumping conditions
302.3	Bottom of the Borehole (based on the geophysical logging)

During HPFM logging under pumping conditions in borehole BR-005, water was pumped from the top of the water column at a rate of approximately 0.25 gpm. The total drawdown during HPFM logging was 2.7 feet, but the water was still drawing down at a rate of approximately 0.07 feet/minute during HPFM testing under pumping conditions.

BR-004. Flow was not detected in borehole BR-004 with the HPFM under ambient or pumping conditions. However, possible minor flow was detected in the borehole based on the fluid temperature and fluid conductivity data as summarized in the Table 7 below.

Table 7 – BR-004 Summary of Borehole Flow

Depth (Feet)	Comments
15.1	Ambient Water Level
17.0	Bottom of the 6-Inch Steel Casing
17.0 - 22.4	possible flow into or out of the borehole
302.3	Bottom of the Borehole (based on the geophysical logging)

During HPFM logging under pumping conditions in borehole BR-004, water was pumped from the top of the water column at a rate of approximately 0.20 gpm. While pumping water from the borehole, all the water generated during pumping was produced from drawdown, there was no measurable flow of water into the borehole. We also monitored recovery of the water level for approximately 15 minutes after pumping was suspended and there was no measurable water level recovery after pumping.

Summary of Bedrock Fracture Results

In general, the bedrock encountered in the logged boreholes is predominantly competent with a few discrete zones in each borehole of fractured/weathered bedrock, typically occurring within 20 feet of the top of the open bedrock portion of each logged borehole. The bedrock fracture orientations and statistics are plotted and reported on the bedrock fracture statistics plots. Based on the televiewer (OTV & ATV) data from the five (5) logged boreholes, 548 bedrock fractures were detected.

Of the 548 detected bedrock fractures:

- 335 are interpreted as Fracture Rank 1 (minor) fractures,
- 183 are interpreted as Fracture Rank 2 (intermediate) fractures, and
- 30 are interpreted as Fracture Rank 3 (major) fractures.

Based on the detected bedrock fractures, the primary bedrock fracture set at the site dips to the east-southeast (60° - 135°), but has no prominent dip angle with most of the fracture dipping 5° - 75° from horizontal as shown in the All Boreholes Bedrock Fracture Statistics Plots.

Limitations on the Use of this Report

This letter report was prepared for the exclusive use of AECOM (Client). No other party shall be entitled to rely on this Report, or any information, documents, records, data, interpretations, advice or opinions given to Client by Hager-Richter Geoscience, Inc. in the performance of its

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HRGS has used reasonable care, skill, competence, and judgment in the performance of its services for this project consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by HRGS should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this

Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

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If you have any questions or comments on this report, please contact us at your convenience. It has been a pleasure to work with the AECOM on this project. We look forward to working with you again in the future.

Sincerely,
HAGER-RICHTER GEOSCIENCE, INC.

Robert L. Garfield

Robert L. Garfield, P.G.
Owner / Principal Borehole Geophysicist

List of Enclosures

Figures:	Figure 1. Key to Bedrock Structure Categories
	Figure 2. Tadpole Plot Explanation
	Figure 3. Televiewer Explanation
Appendix 1:	Borehole Geophysical Logs
Appendix 2:	Summary of Borehole Flow Tables
Appendix 3:	Bedrock Fracture Statistics Plots
Appendix 4:	Tables of Bedrock Structures
Appendix 5:	Integrated Borehole Logs

FIGURES

Tadpole	Structure Category (Symbol Color)	Description
	Fracture Rank 1 (Light Blue)	Minor Fracture - not distinct and may not be continuous around the borehole
	Fracture Rank 2 (Blue)	Intermediate Fracture - distinct and continuous around the borehole with little or no apparent aperture
	Fracture Rank 3 (Red)	Major Fracture - distinct and continuous around the borehole with apparent aperture

Figure 1. Key to bedrock structure categories.

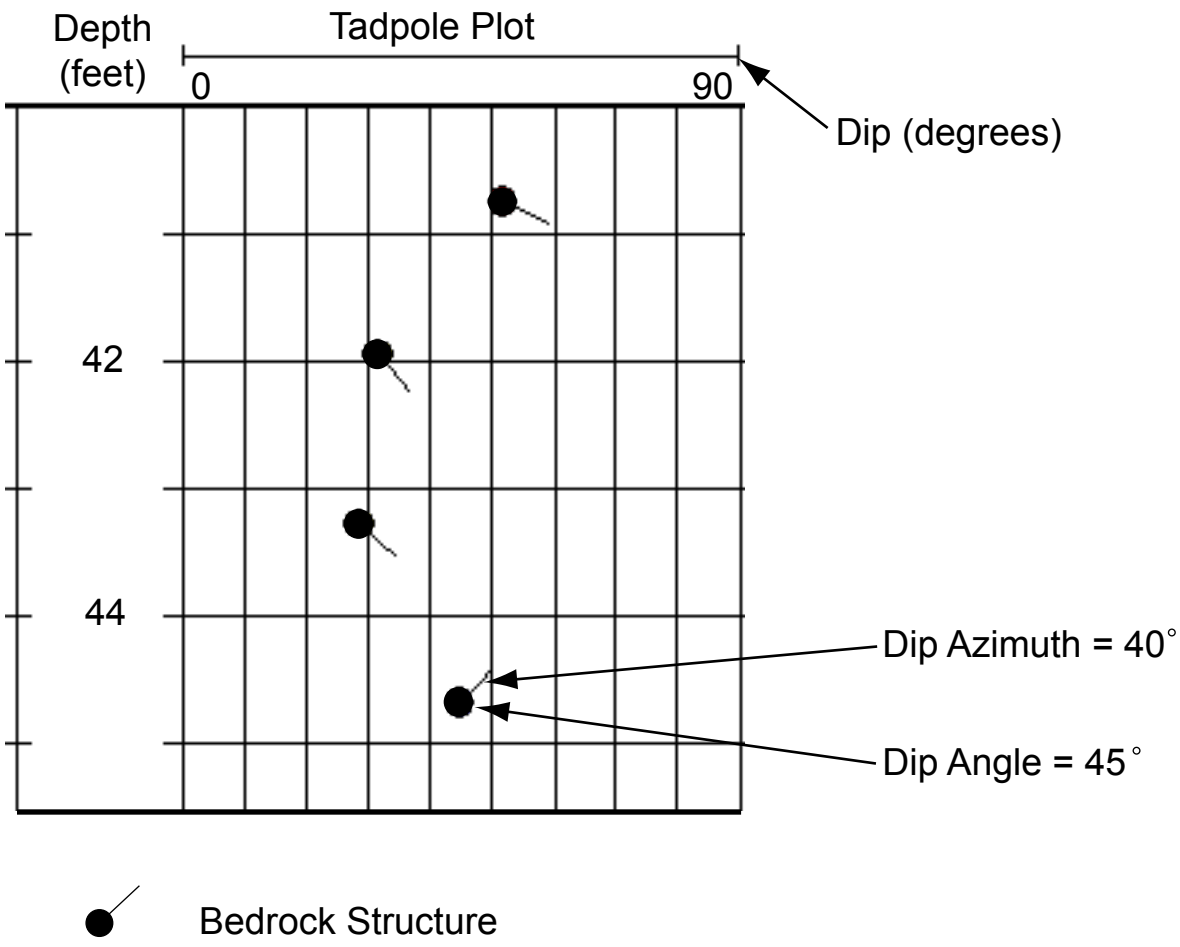


Figure 2. Tadpole plot explanation. The orientation of the bedrock structures is graphically displayed by a tadpole consisting of a circle, the head, and a line, the tail. The position of the head, left to right on the tadpole plot, gives the dip angle of the structure. The left side of the track indicates a dip angle of 0°, and the right side of the track indicates a dip angle of 90° from horizontal. The orientation of the tail gives the dip azimuth of the structure and can be read like a compass. The tail pointing directly up is 0°, north.

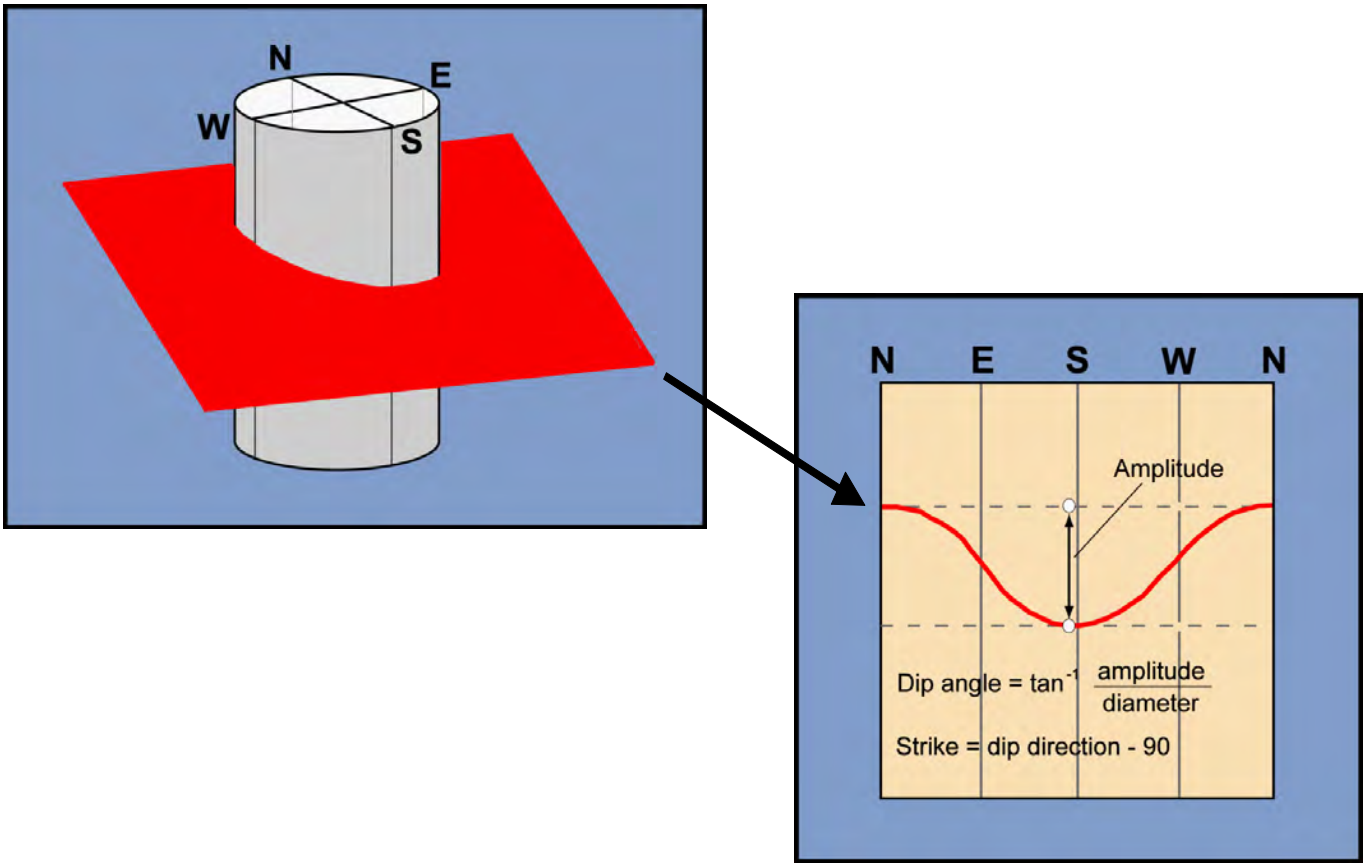


Figure 3. Televiewer explanation. The image on the left depicts a planar structure in red, such as a fracture or bedding plane, intersected by a borehole. The image on the right depicts the same structure unwrapped as it would be displayed in an optical televiewer (OTV) or acoustic televiewer (ATV) log.

Figure modified from: Garfield, R.L., Day-Lewis, F.D., Gray, M.B., Johnson, C.D., Williams, J.H. and Day-Lewis, A.D.F., 2003, Fractured-Rock Aquifer Characterization within a Regional Geologic Context: Results from the Bucknell University Hydrogeophysics Test Site, GSA Northeastern Section, 38th Annual Meeting, Paper No. 25-19.

APPENDIX 1

BOREHOLE GEOPHYSICAL LOGS

HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

BR-001 - BOREHOLE IMAGE LOGS

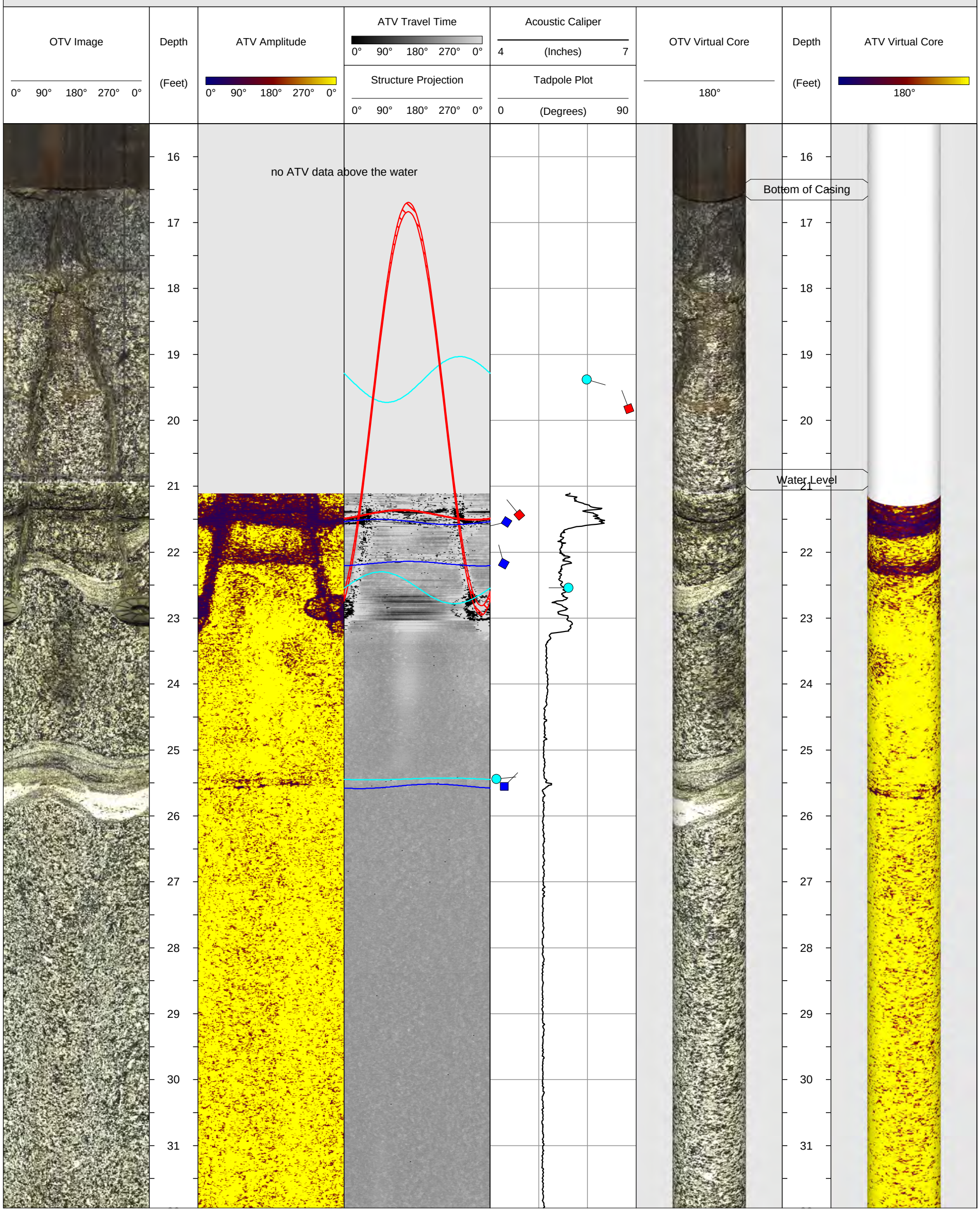
DATE(S) LOGGED: July 6 & 7, 2020

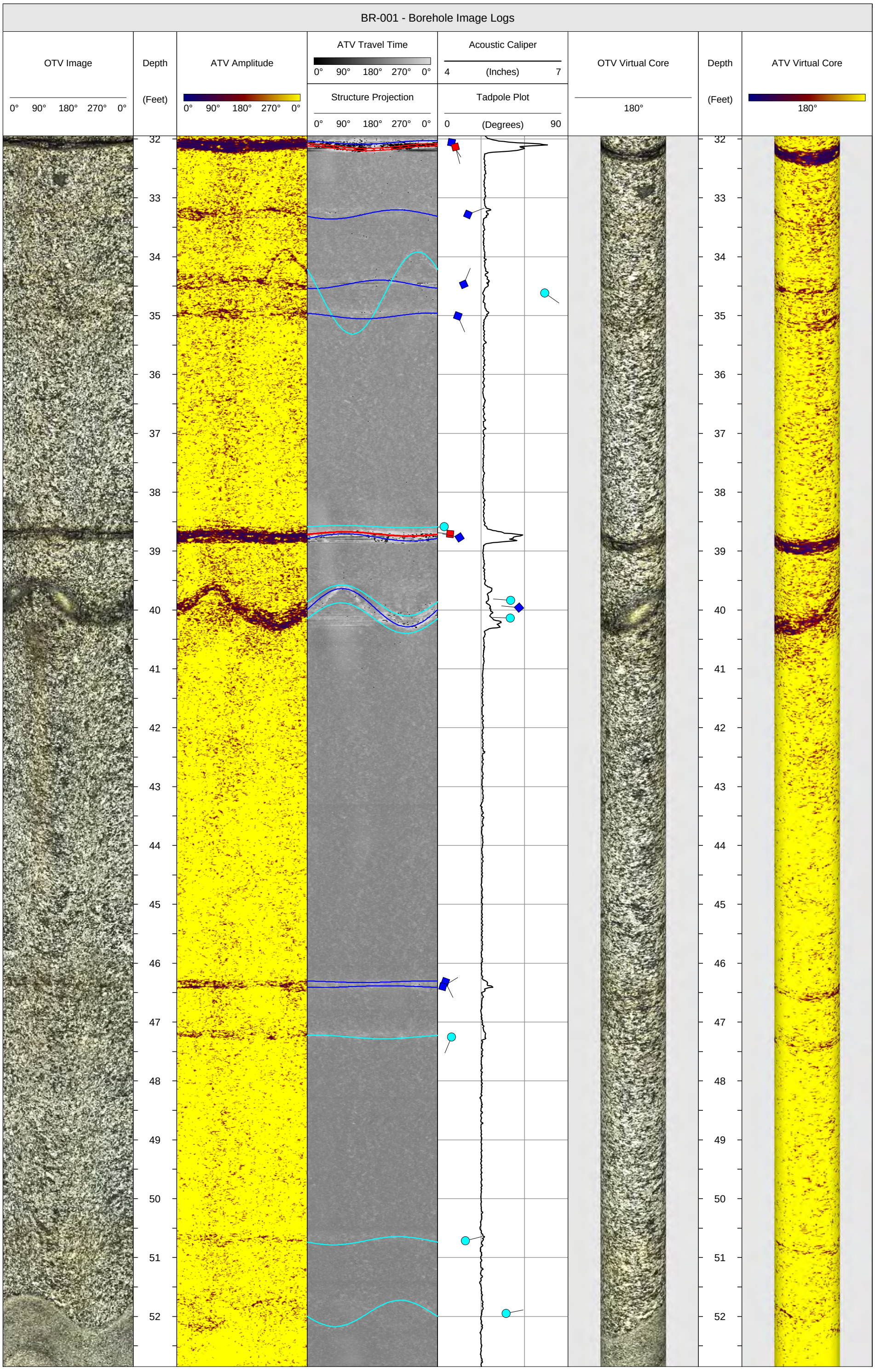
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.0 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	20.8 Feet

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-001 - Borehole Image Logs

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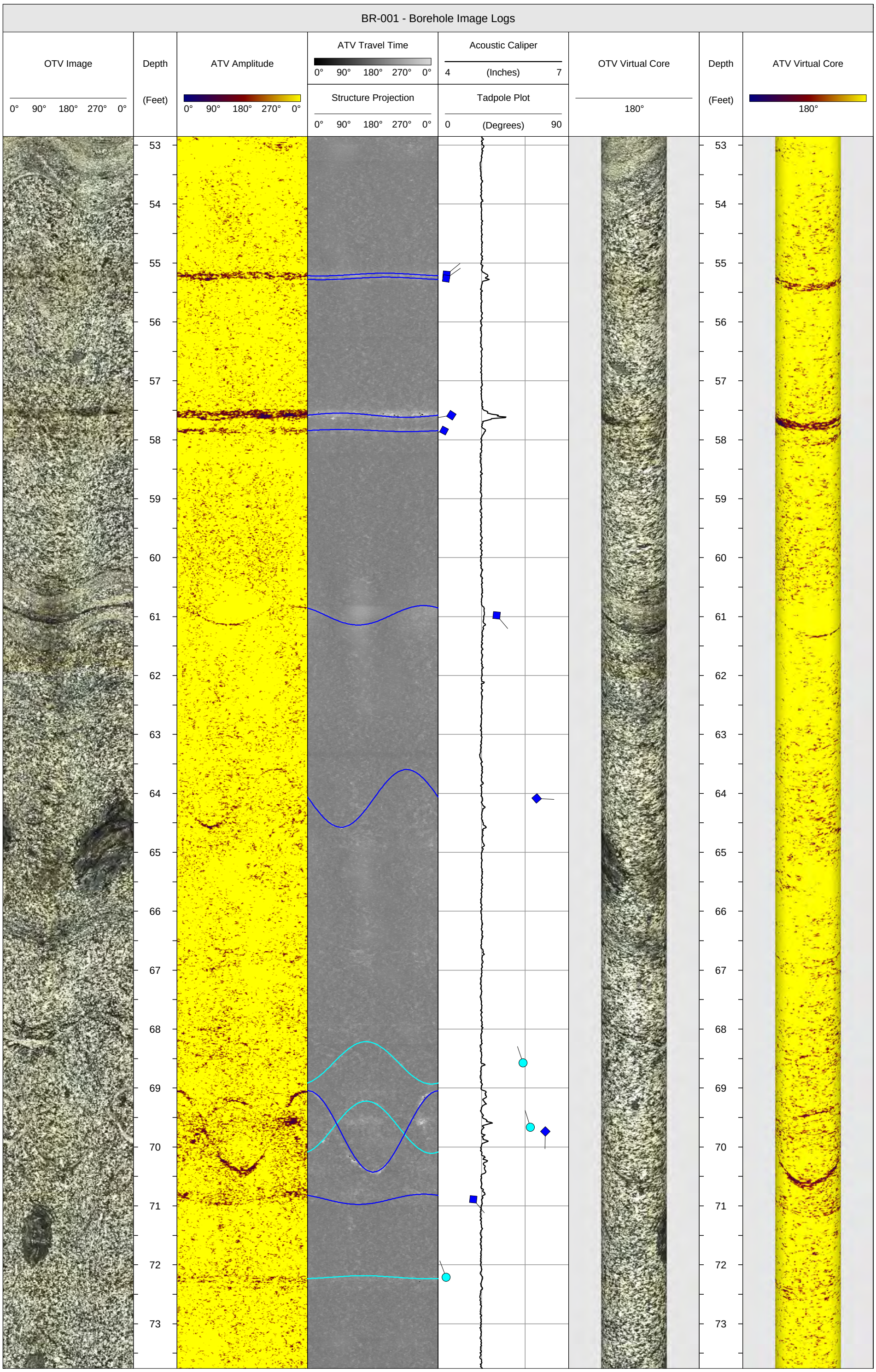
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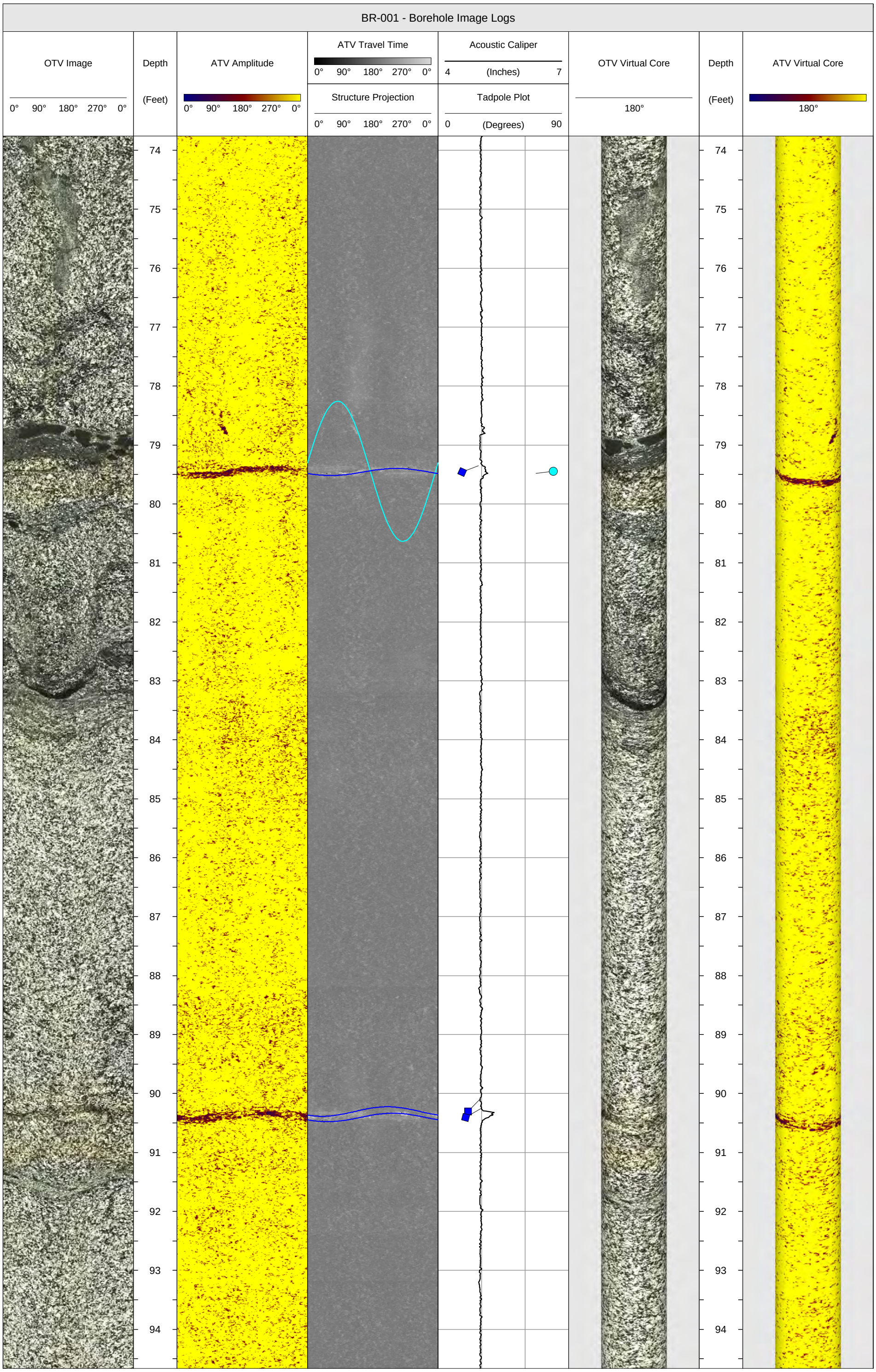
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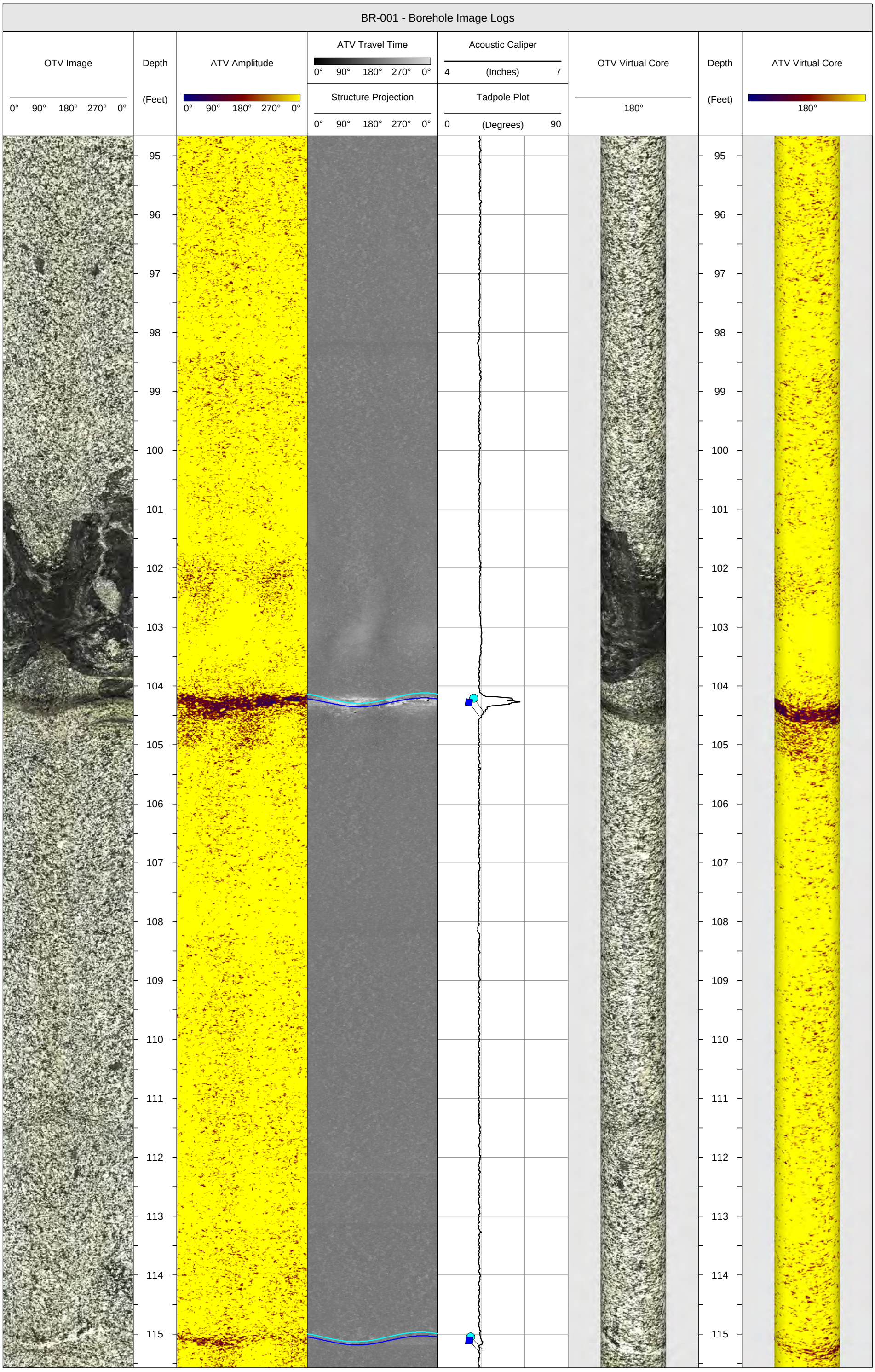
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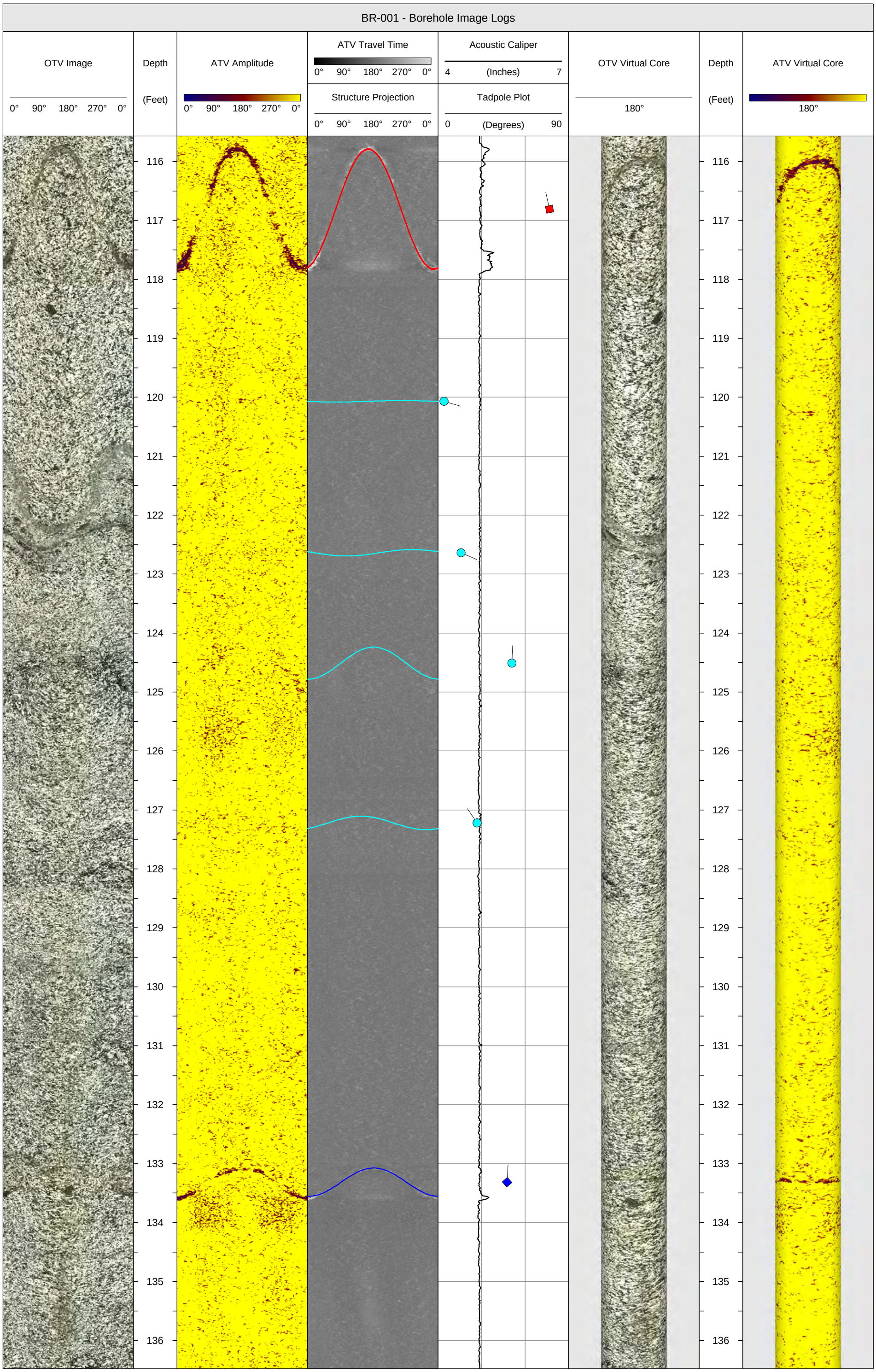
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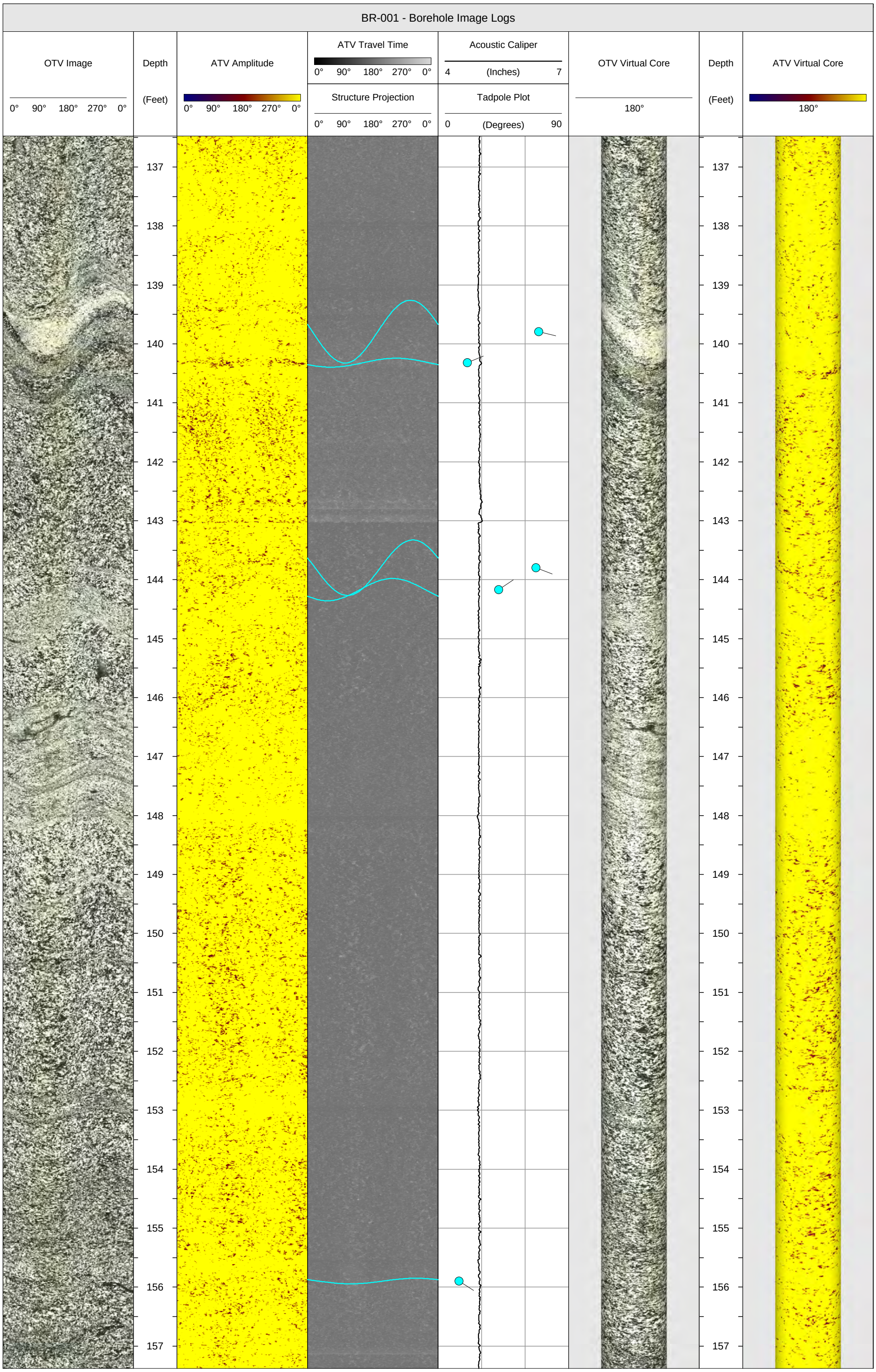
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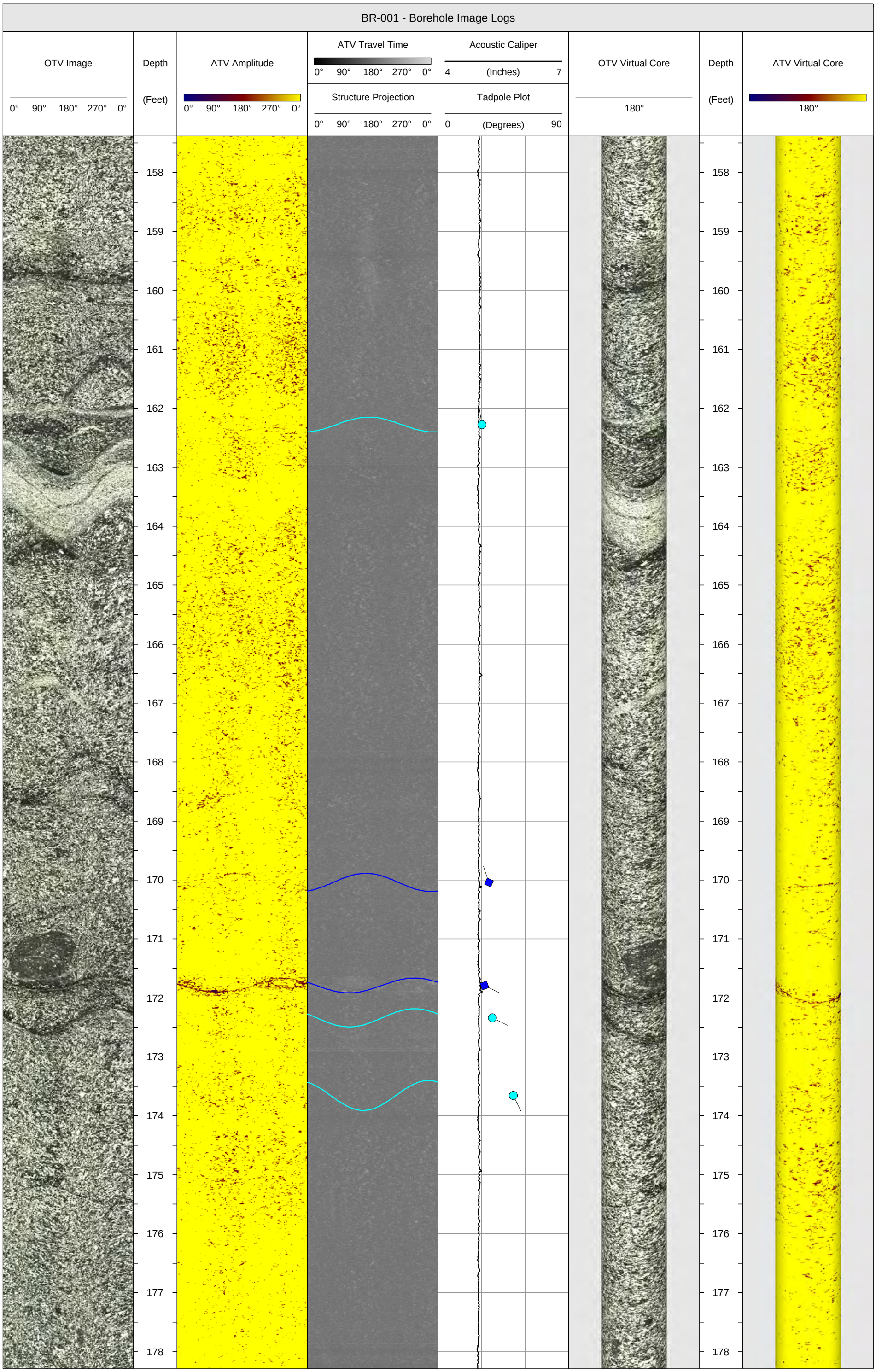
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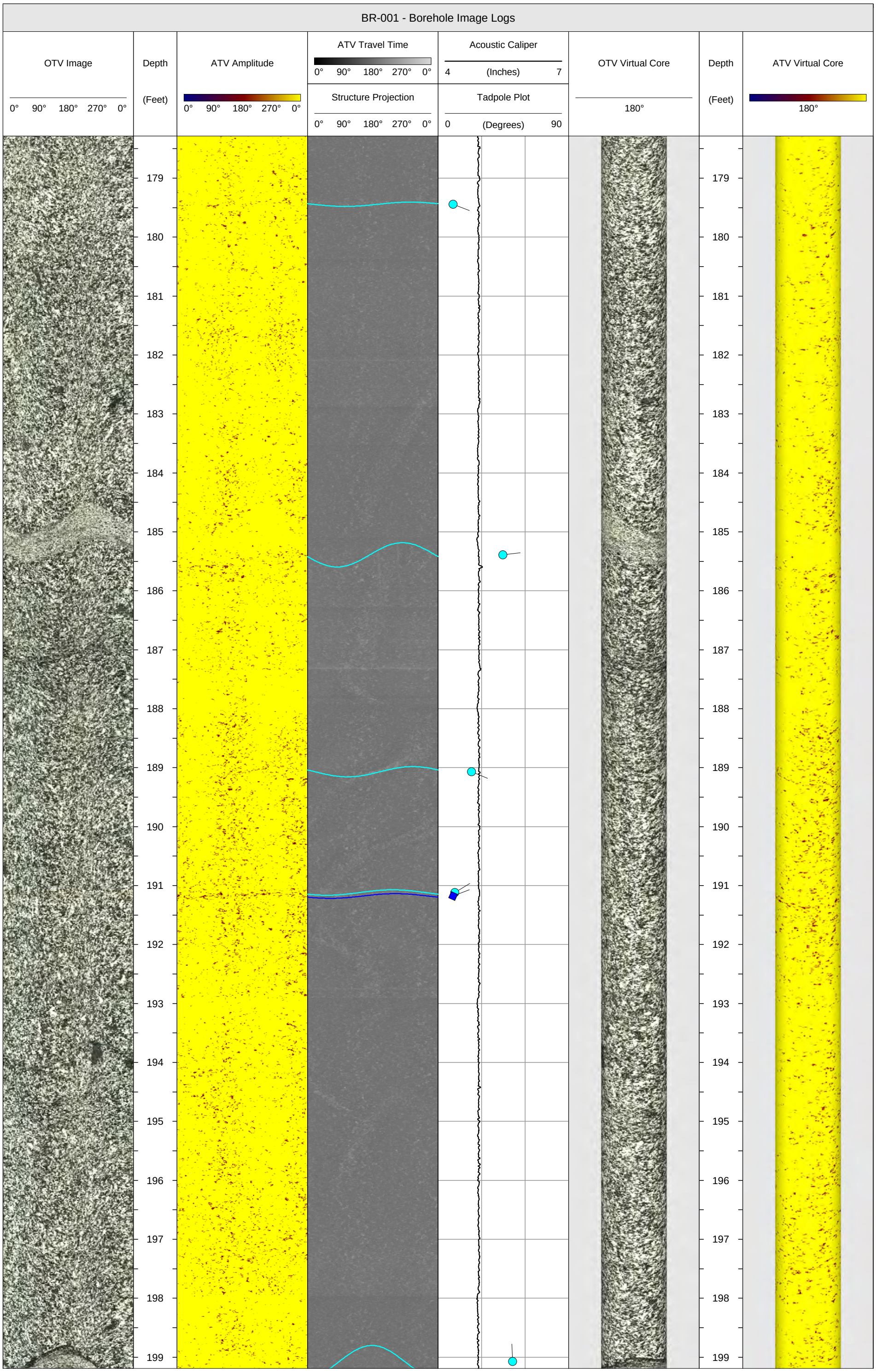
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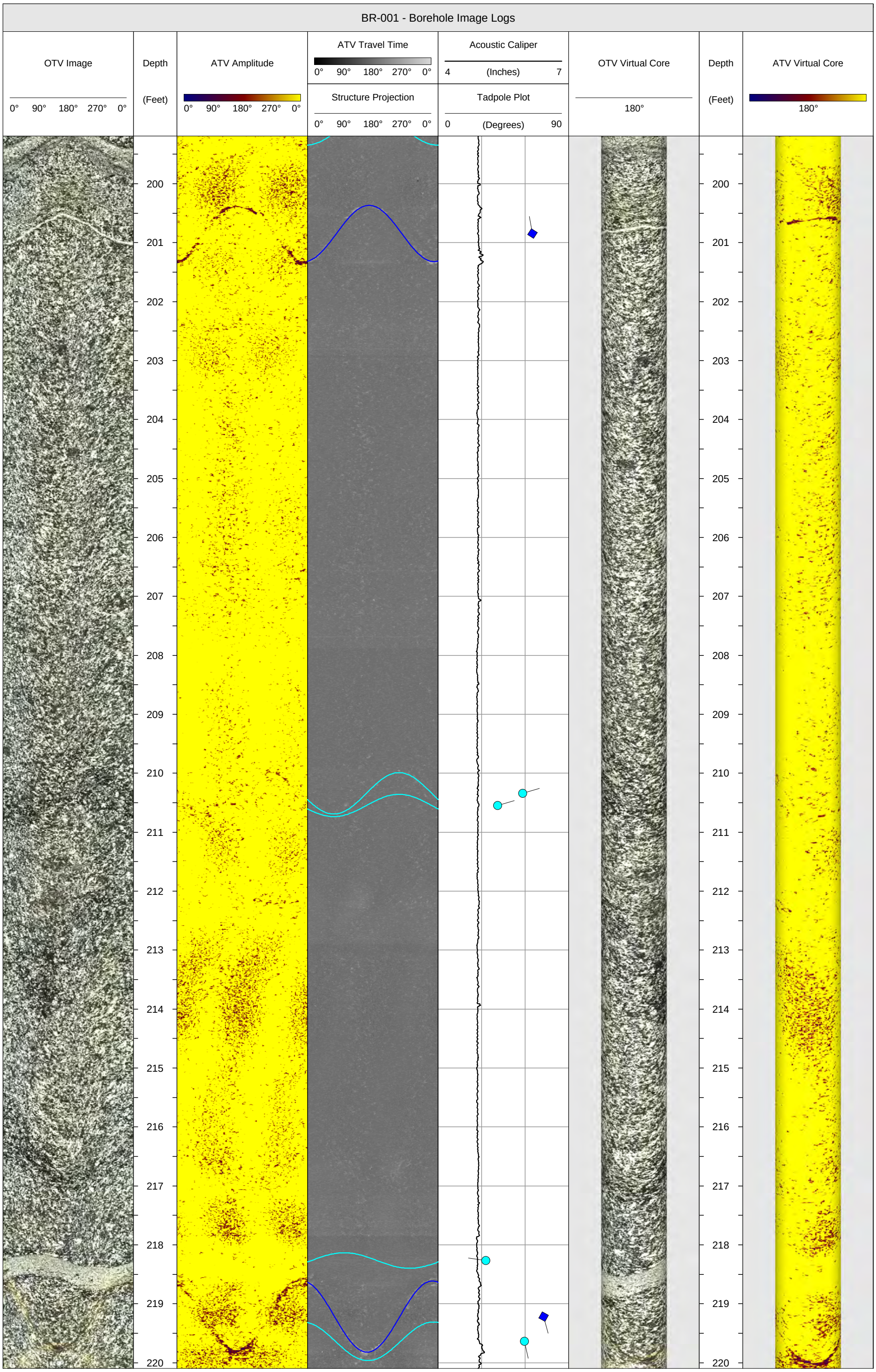
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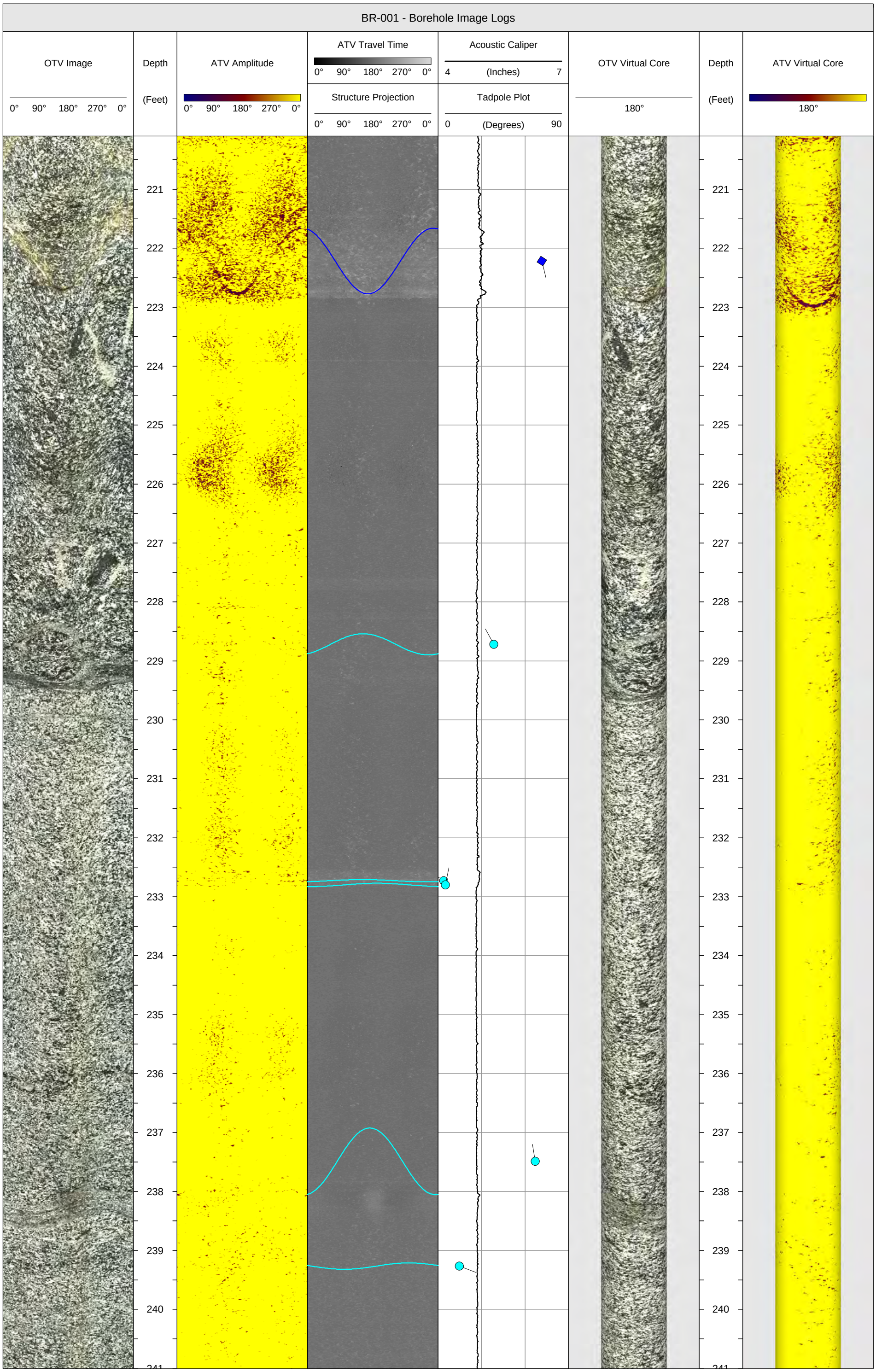
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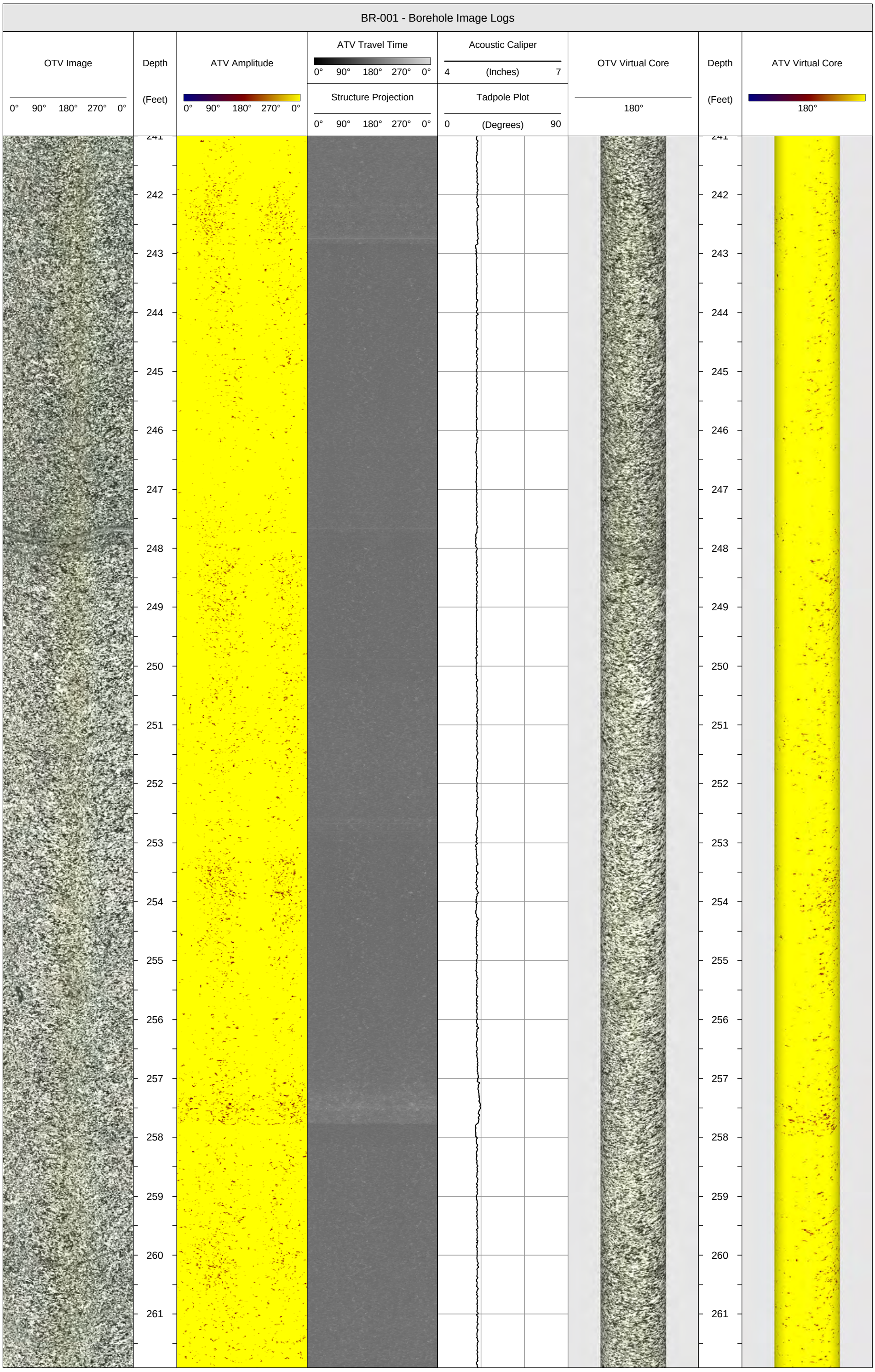
BR-001 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
241
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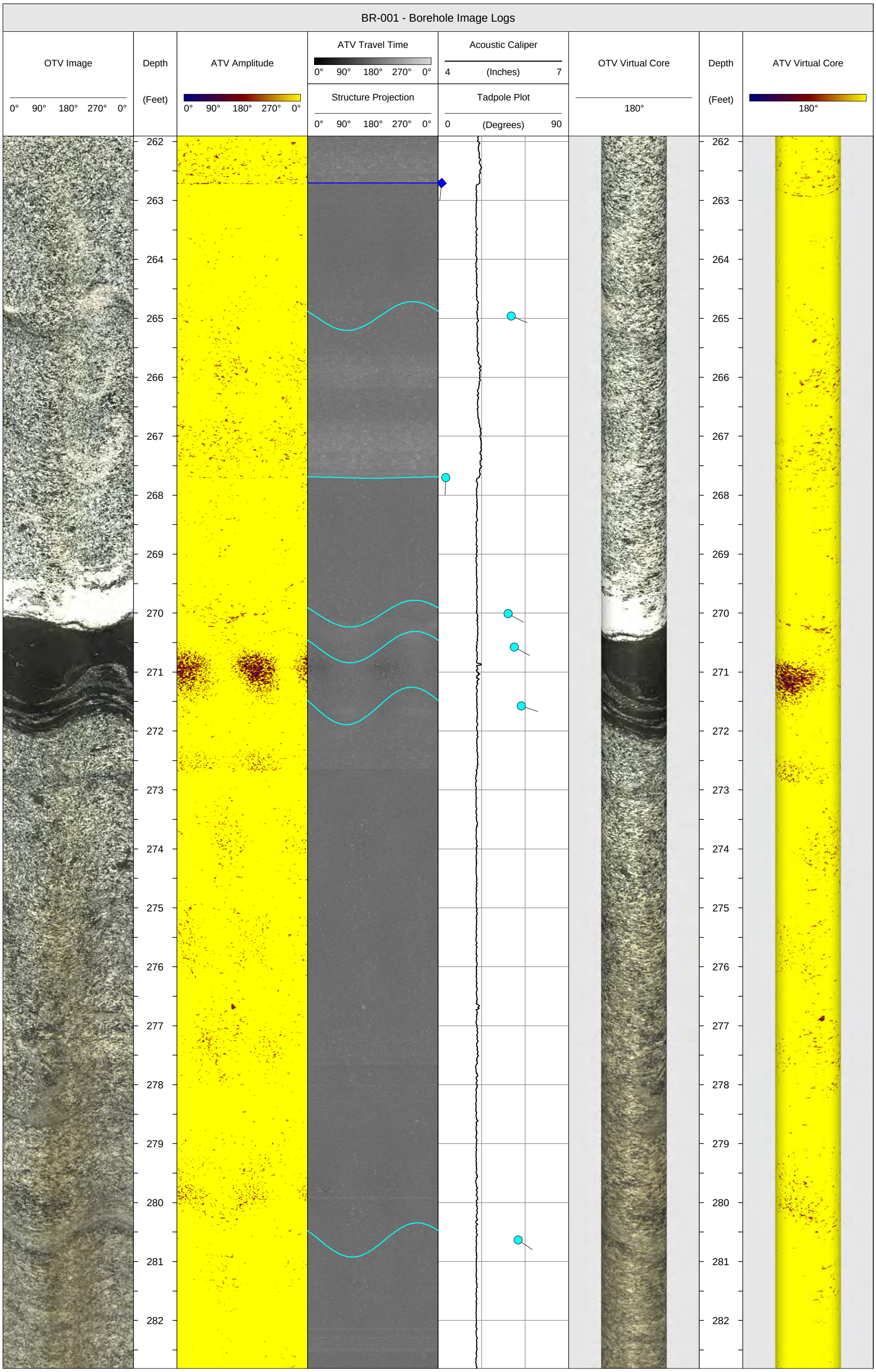
BR-001 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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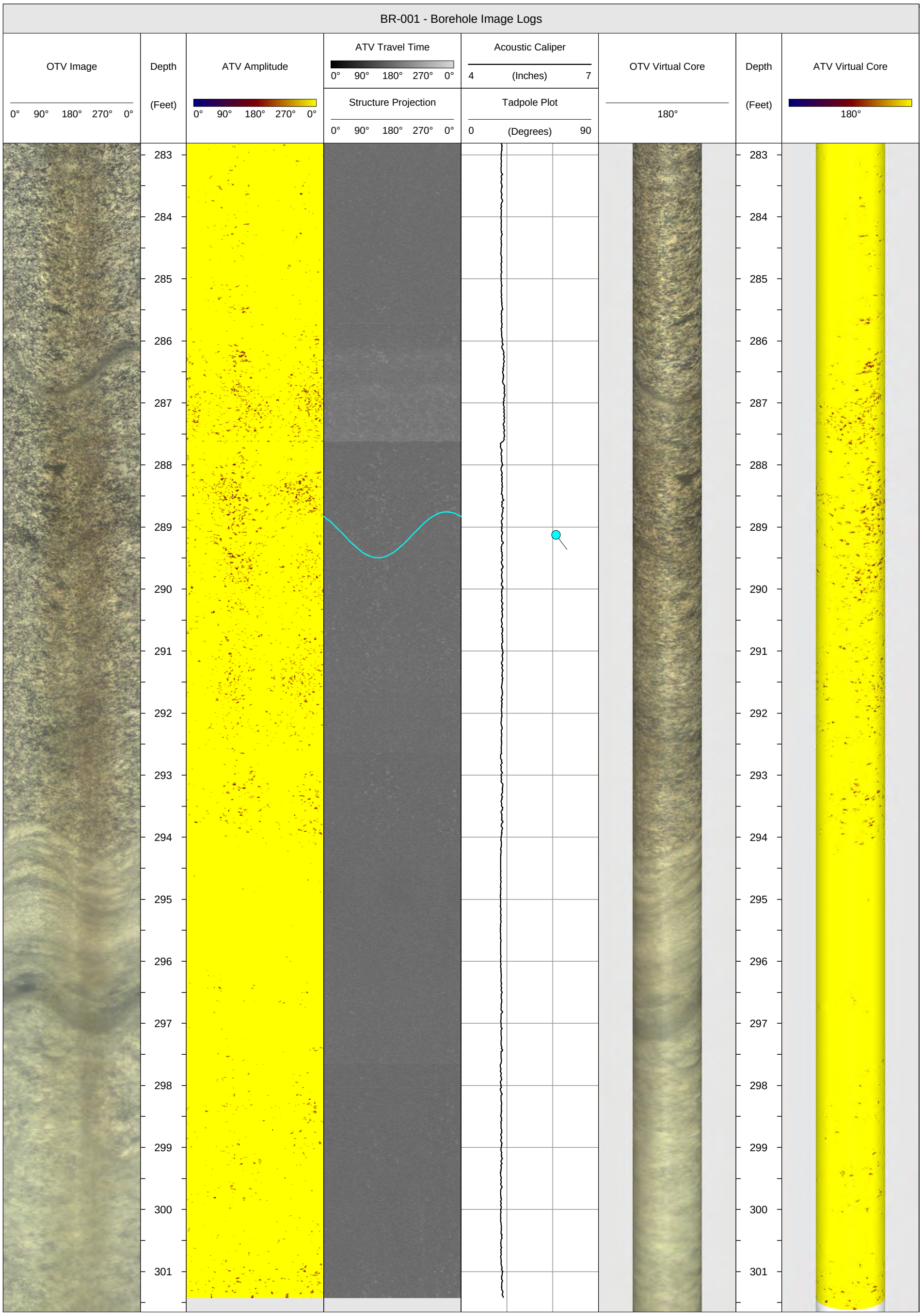
BR-001 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
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ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

BR-001 - BOREHOLE GEOPHYSICAL LOGS

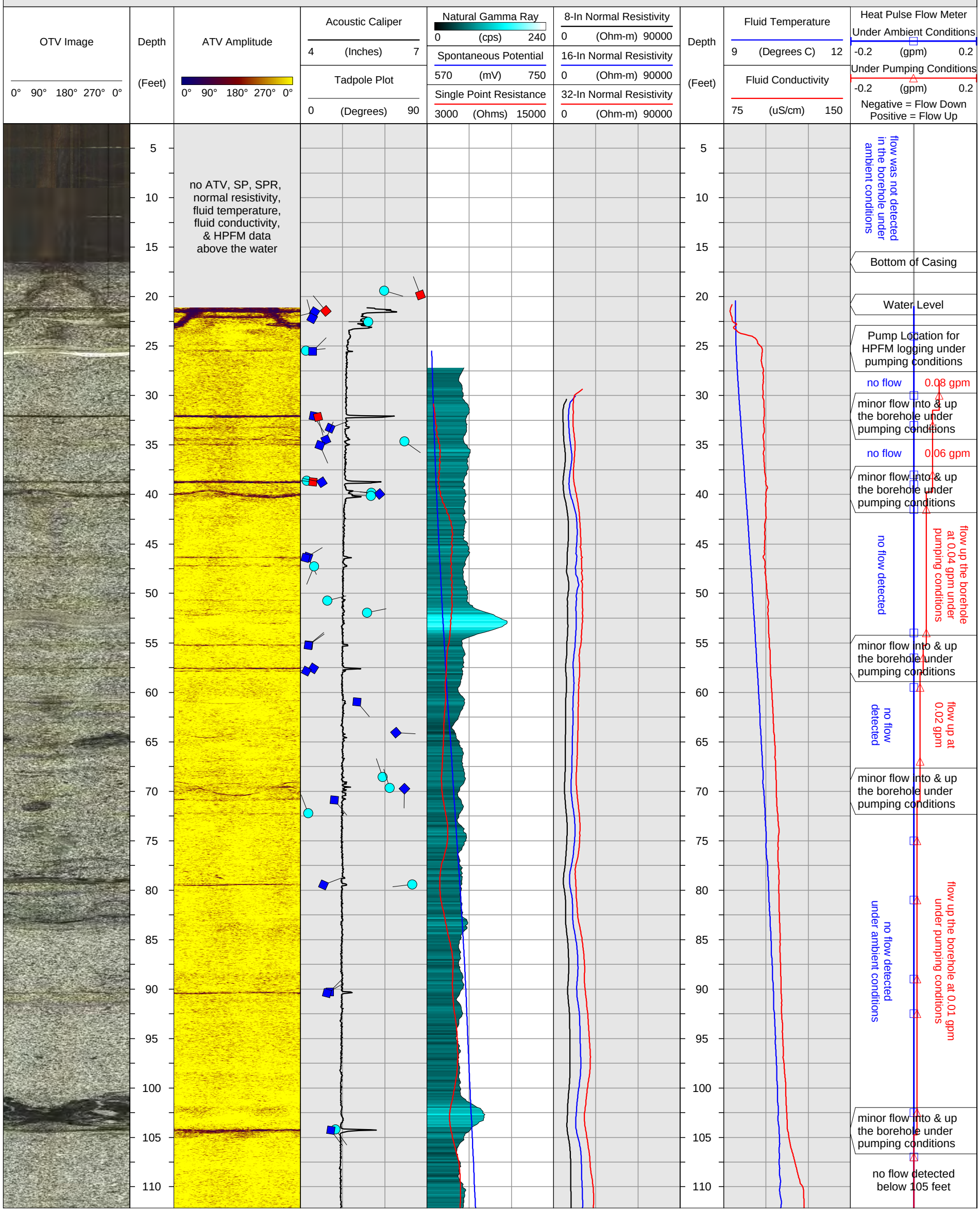
DATE(S) LOGGED: July 6 & 7, 2020

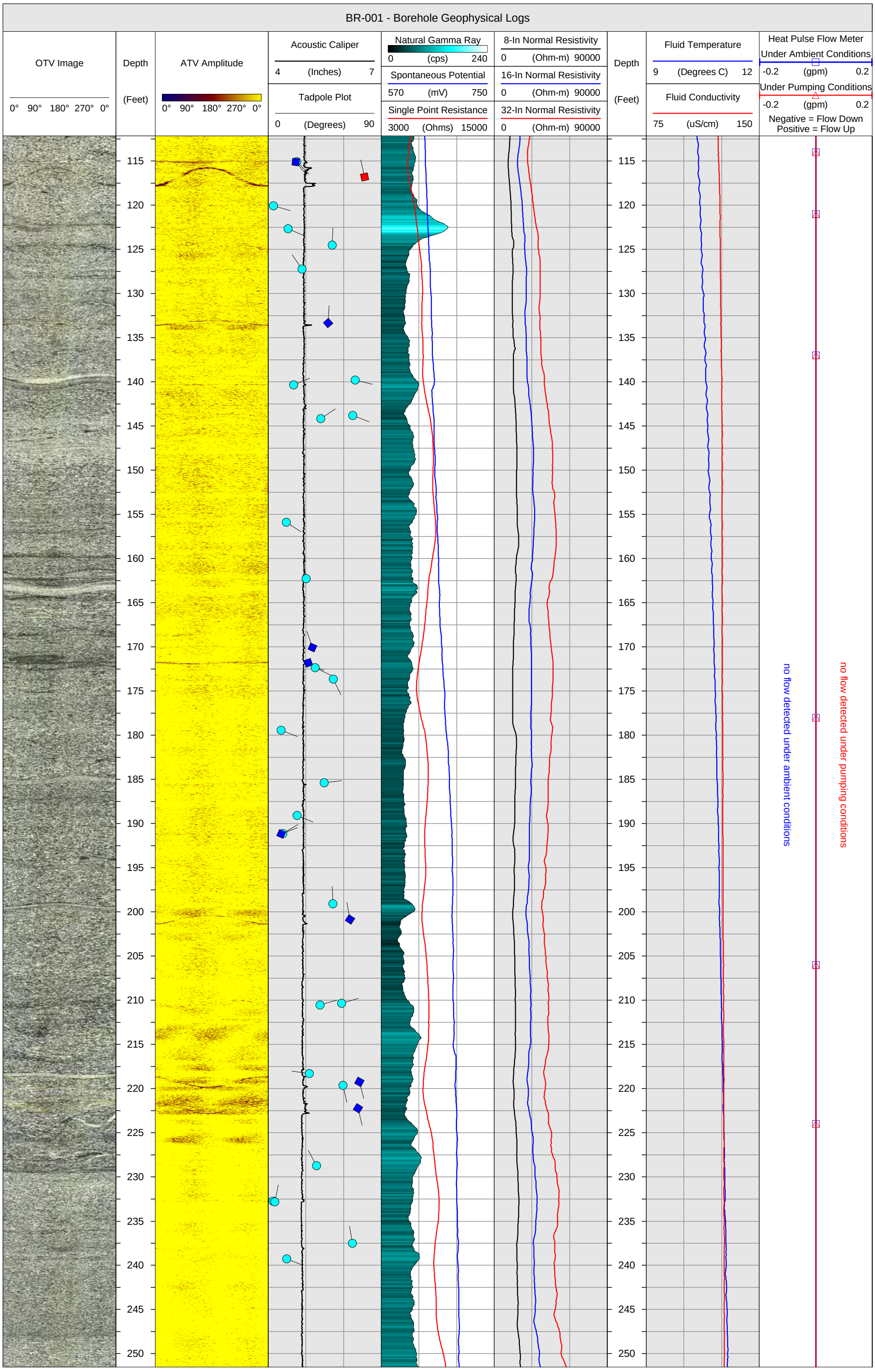
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.0 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	20.8 Feet

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-001 - Borehole Geophysical Logs




BR-001 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 240
Spontaneous Potential
570 (mV) 750
Single Point Resistance
3000 (Ohms) 15000
8-In Normal Resistivity
0 (Ohm-m) 90000
16-In Normal Resistivity
0 (Ohm-m) 90000
32-In Normal Resistivity
0 (Ohm-m) 90000
Depth
(Feet)
Fluid Temperature
9 (Degrees C) 12
Fluid Conductivity
75 (uS/cm) 150
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
no flow detected under ambient conditions
no flow detected under pumping conditions
115
120
125
130
135
140
145
150
155
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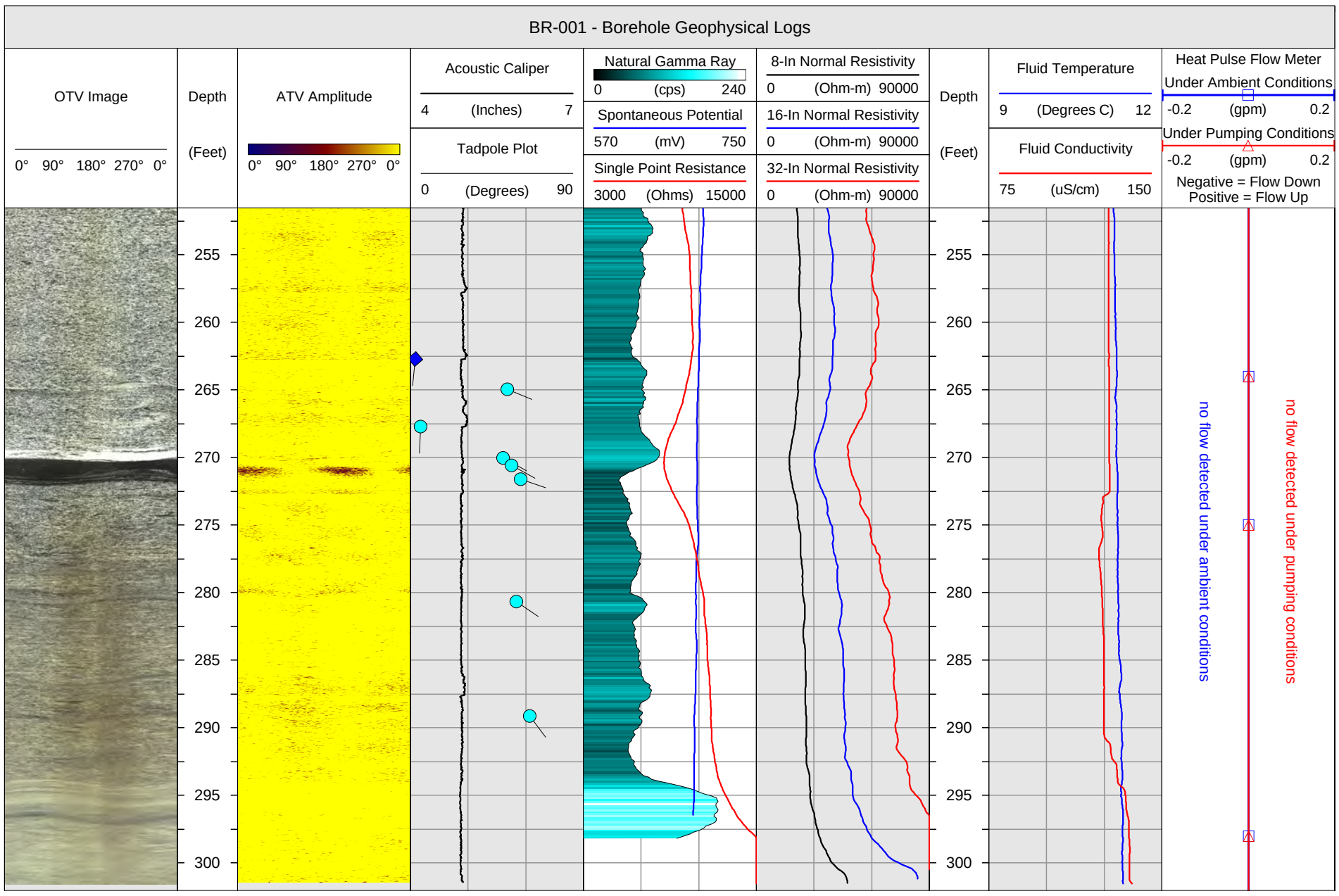
BR-001 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 240
Spontaneous Potential
570 (mV) 750
Single Point Resistance
3000 (Ohms) 15000
8-In Normal Resistivity
0 (Ohm-m) 90000
16-In Normal Resistivity
0 (Ohm-m) 90000
32-In Normal Resistivity
0 (Ohm-m) 90000
Depth
(Feet)
Fluid Temperature
9 (Degrees C) 12
Fluid Conductivity
75 (uS/cm) 150
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
no flow detected under ambient conditions
no flow detected under pumping conditions
255
260
265
270
275
280
285
290
295
300

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BR-002 - BOREHOLE IMAGE LOGS

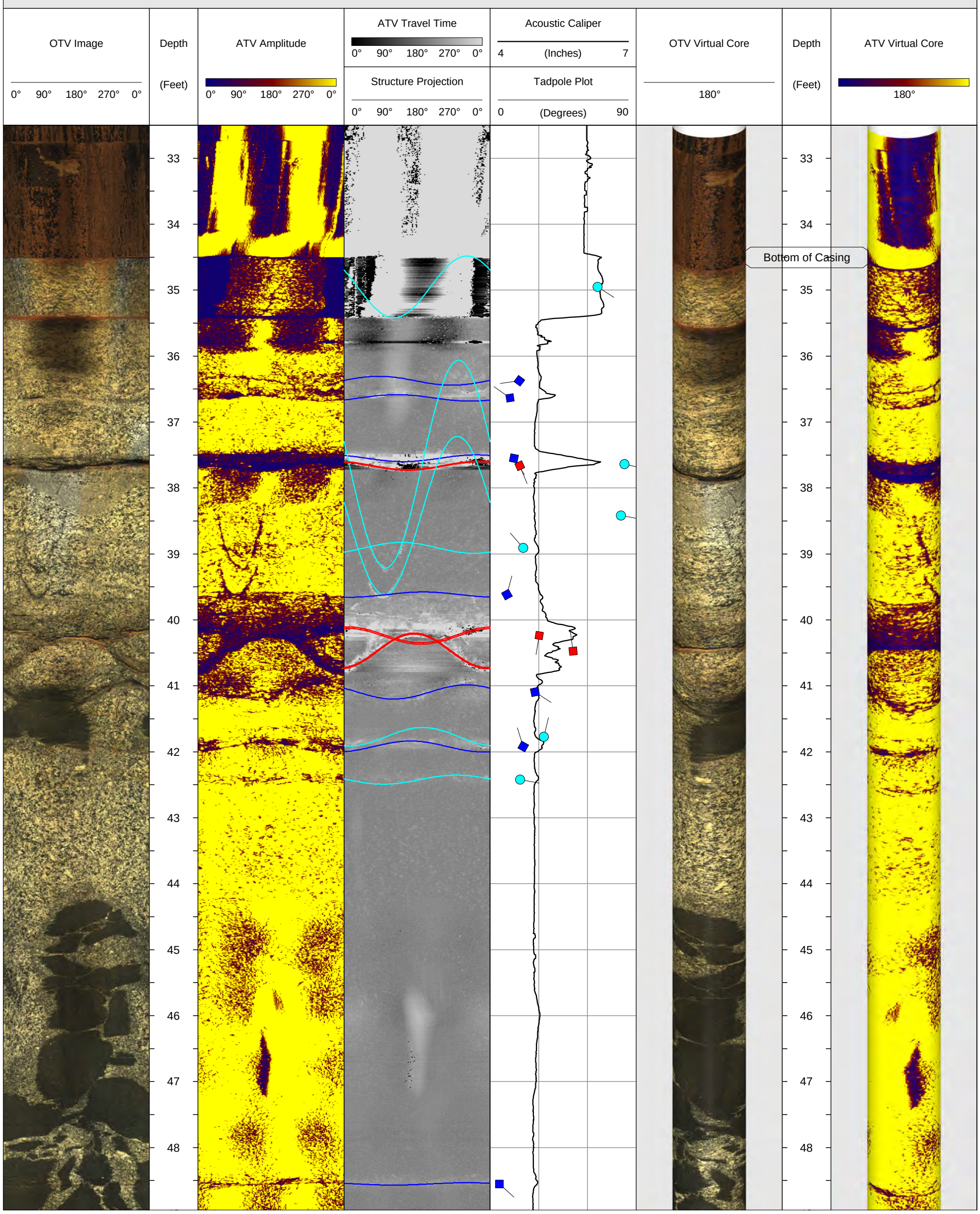
DATE(S) LOGGED: July 6 & 7, 2020

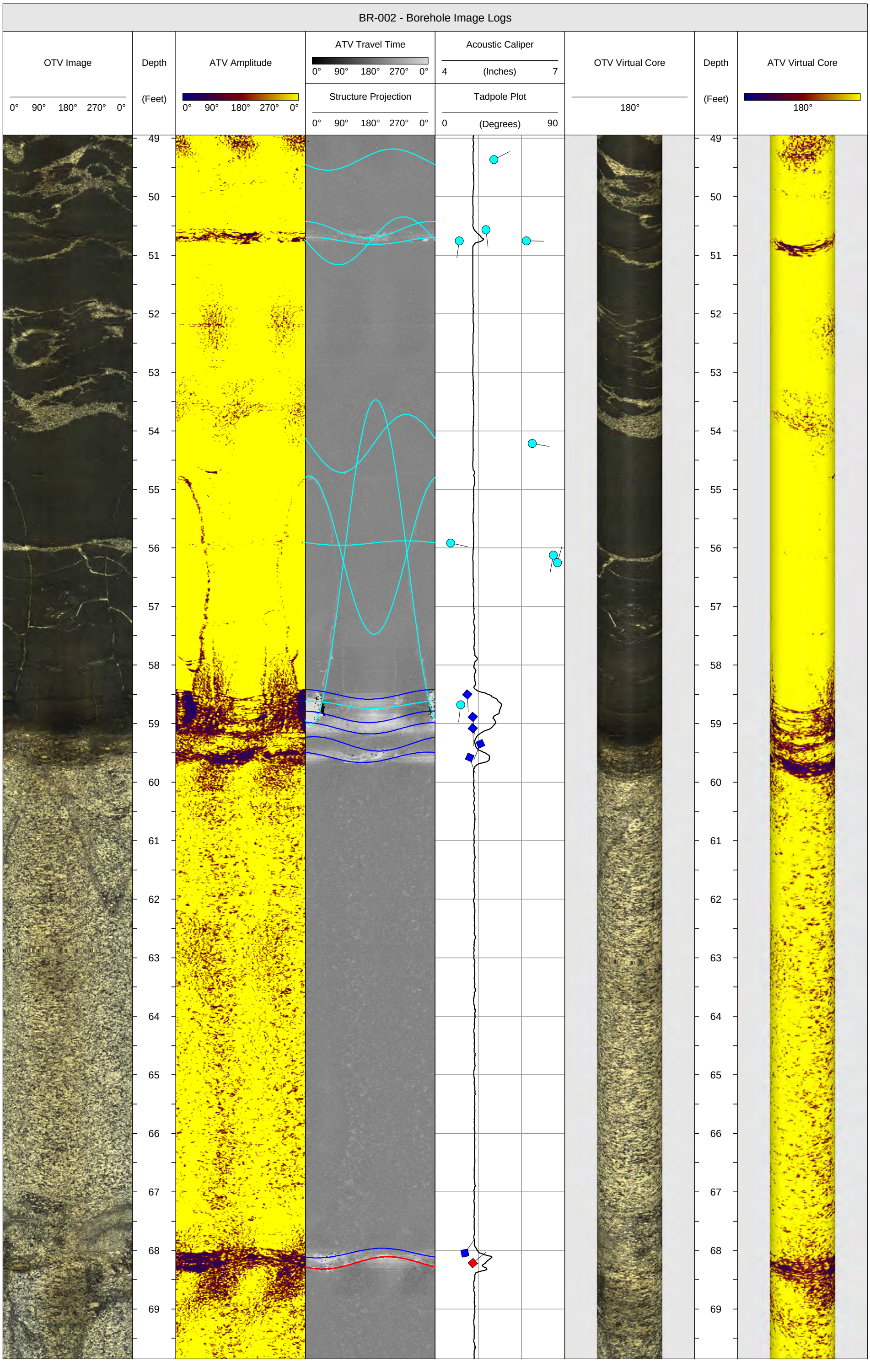
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.1 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	22.5 Feet

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-002 - Borehole Image Logs




BR-002 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
49
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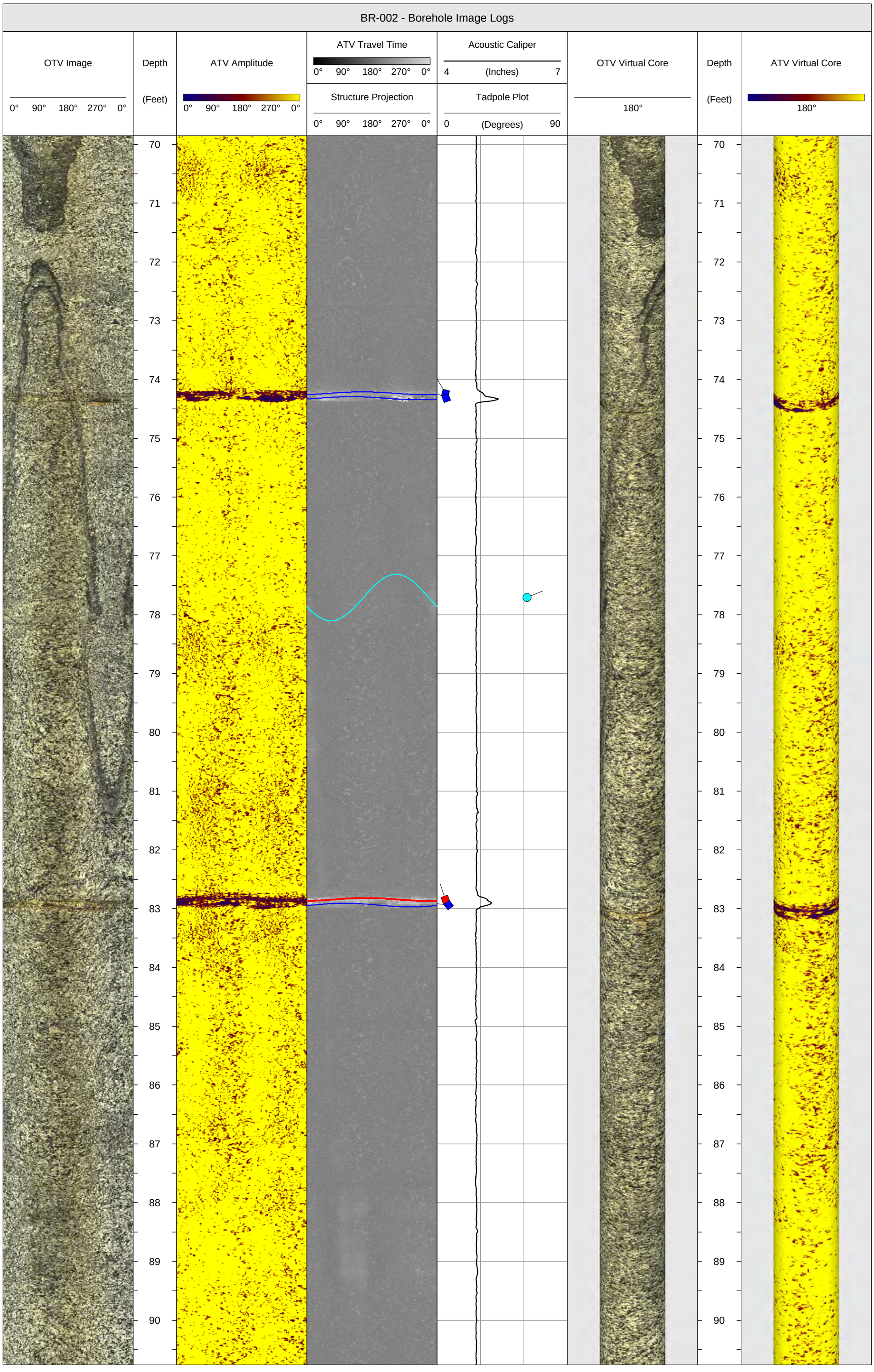
BR-002 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
70
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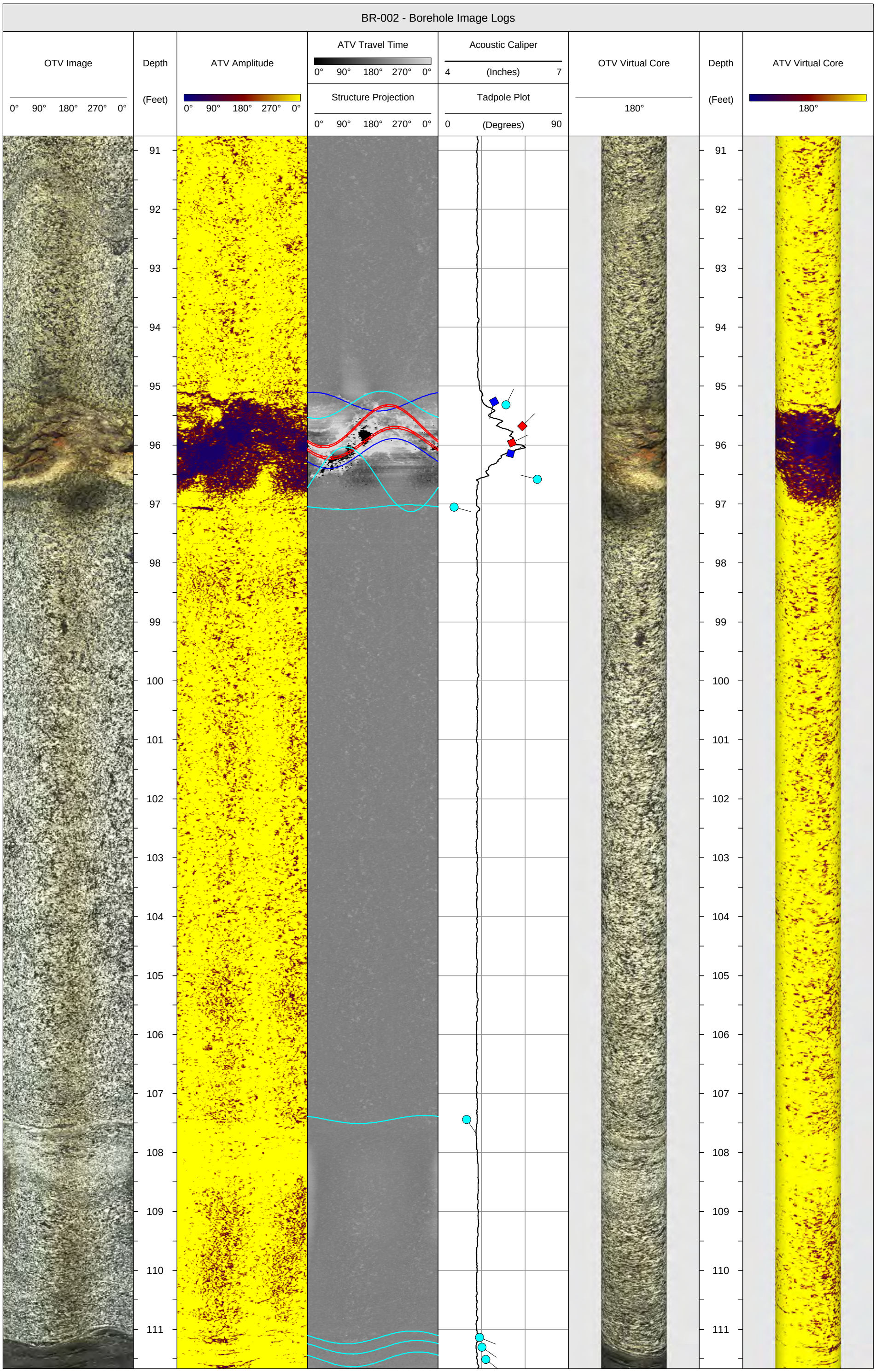
BR-002 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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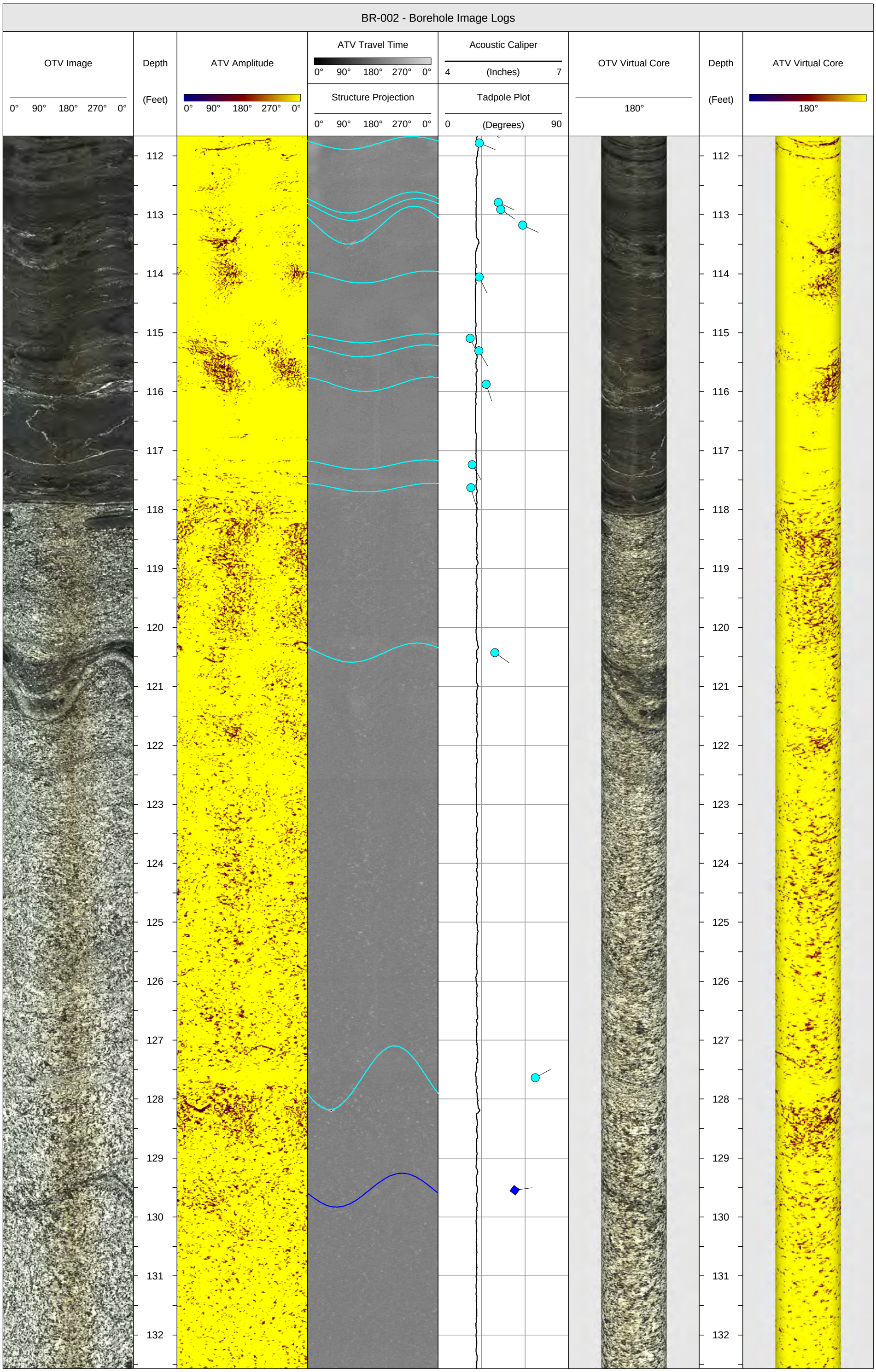
BR-002 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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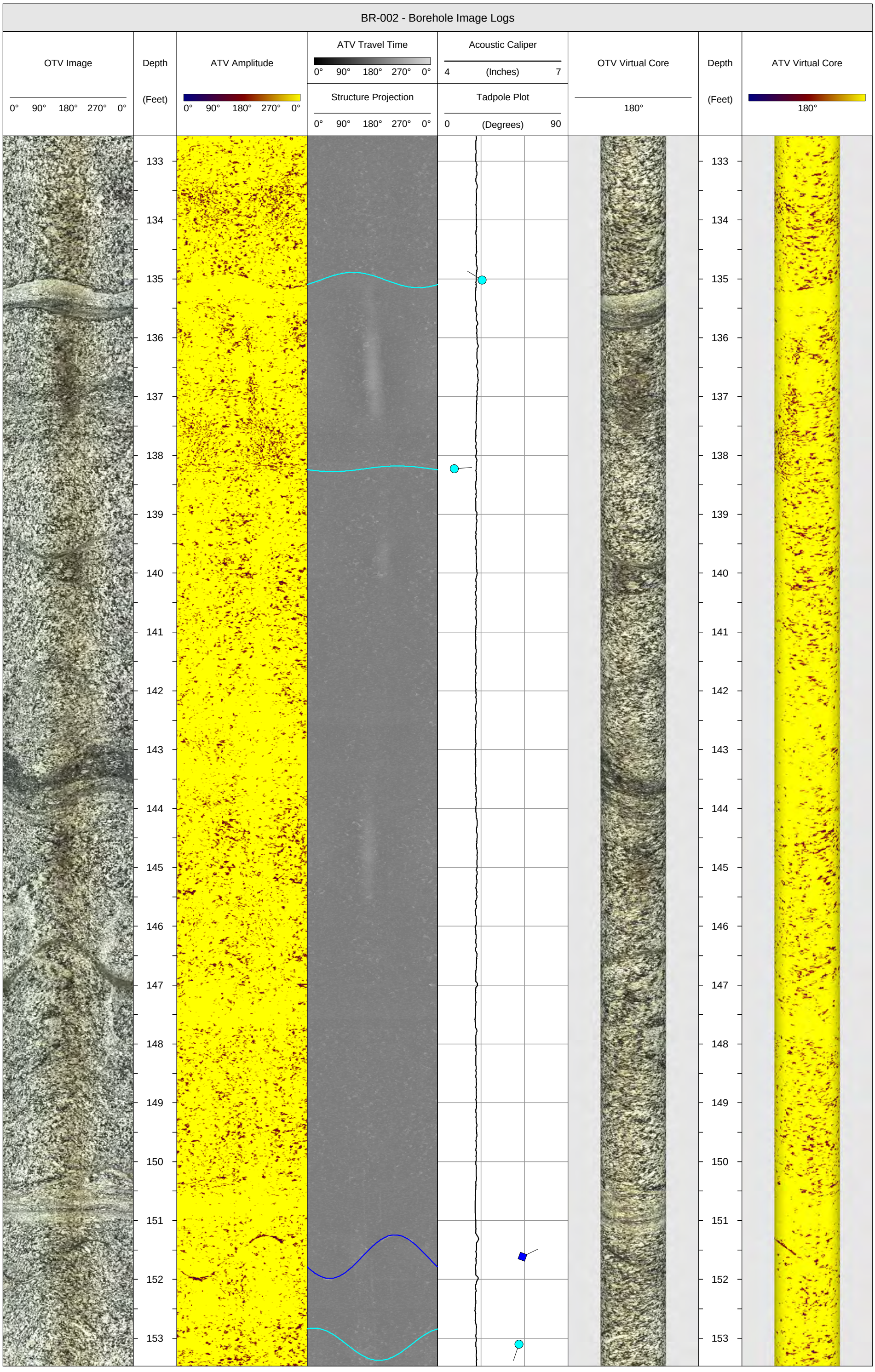
BR-002 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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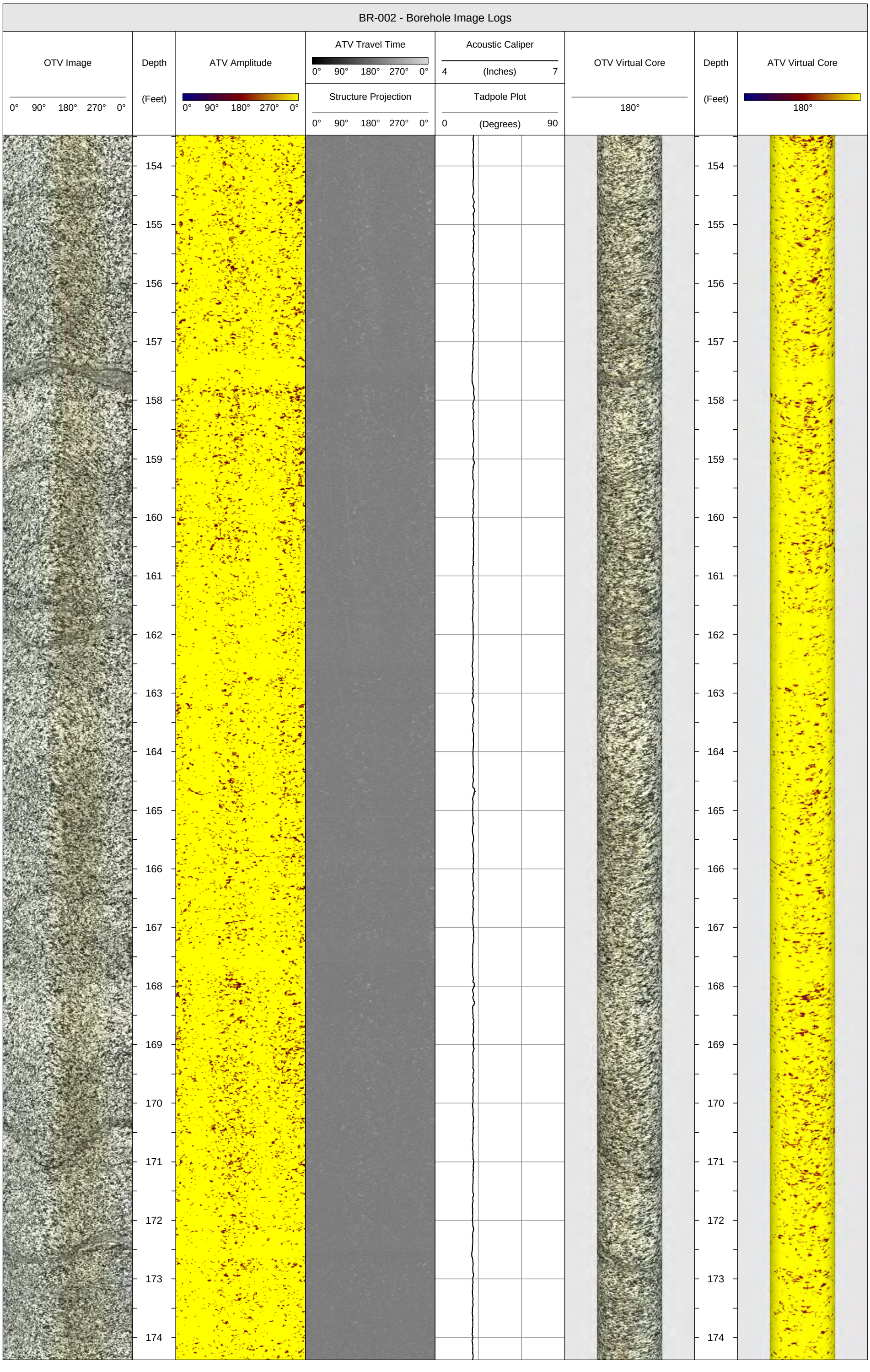
BR-002 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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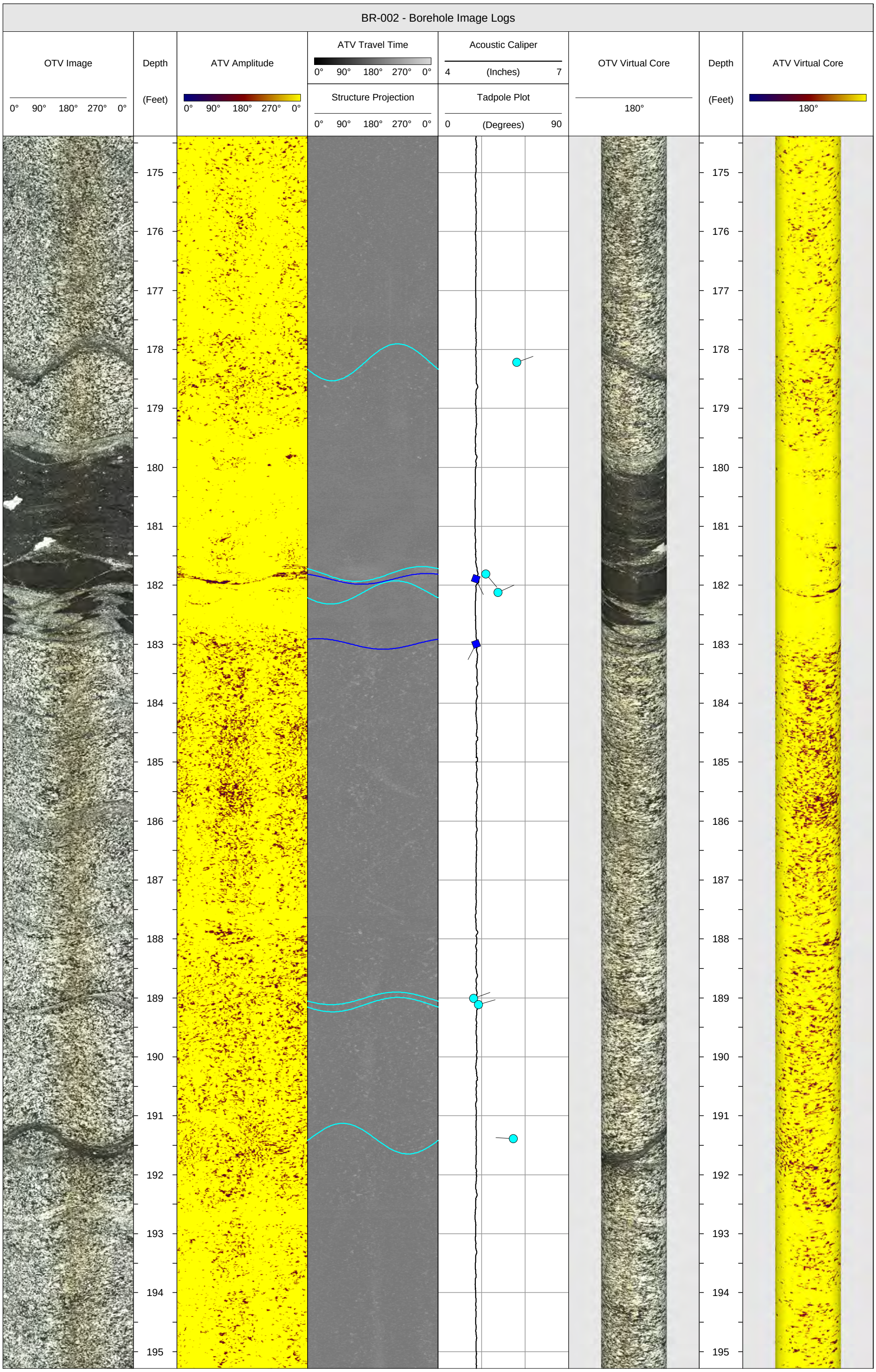
BR-002 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
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ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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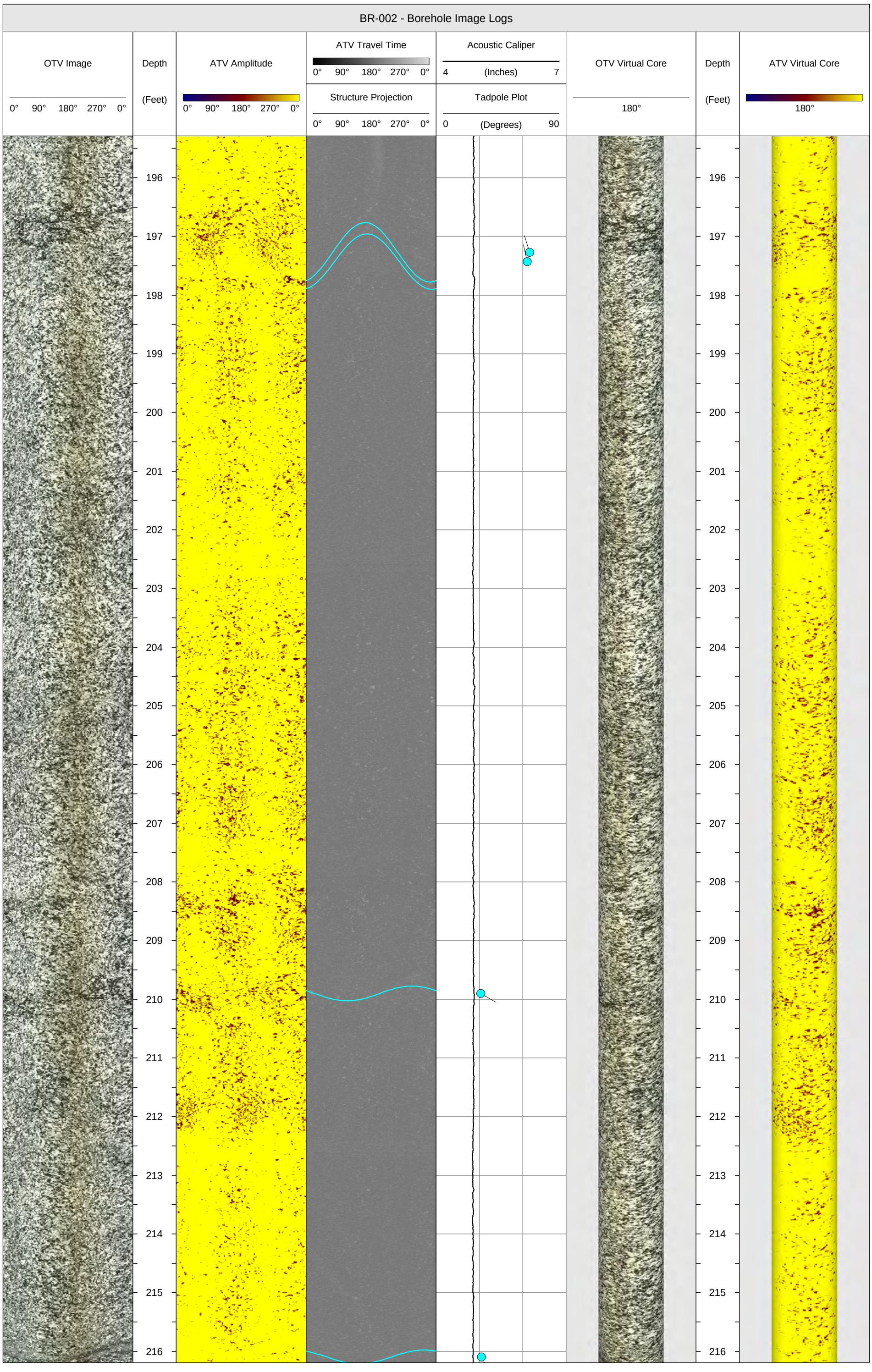
BR-002 - Borehole Image Logs
OTV Image
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Depth
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0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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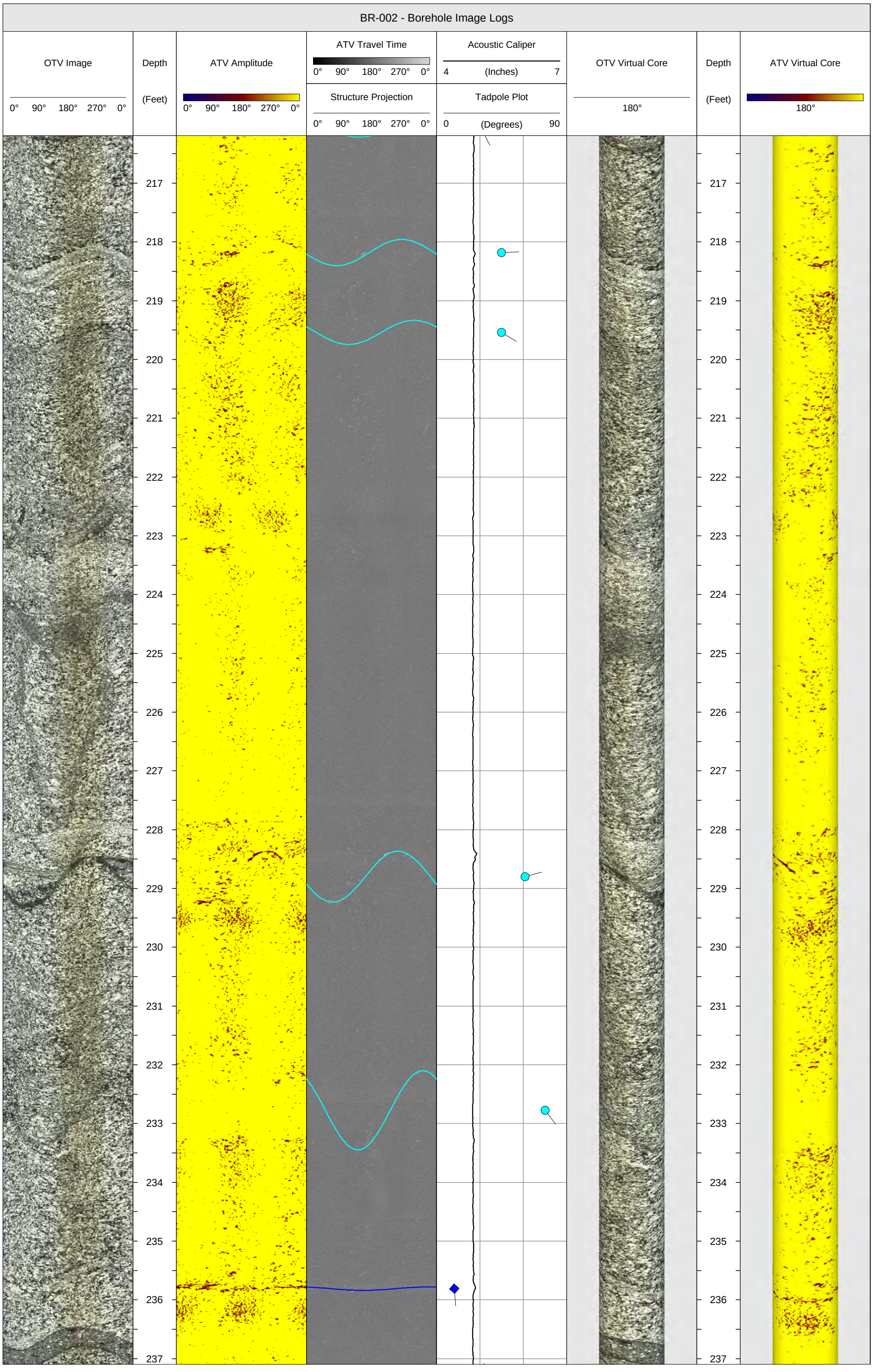
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ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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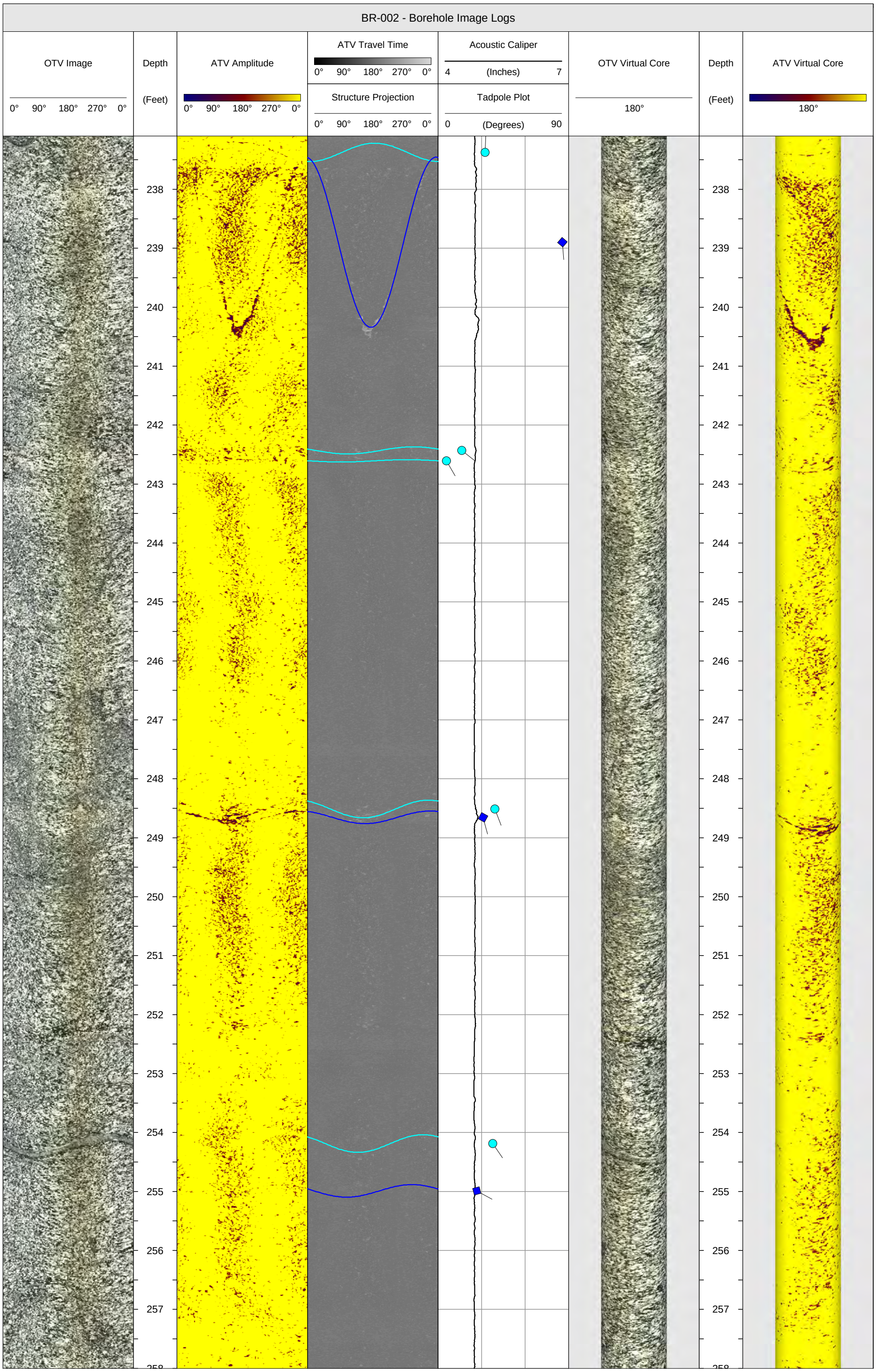
BR-002 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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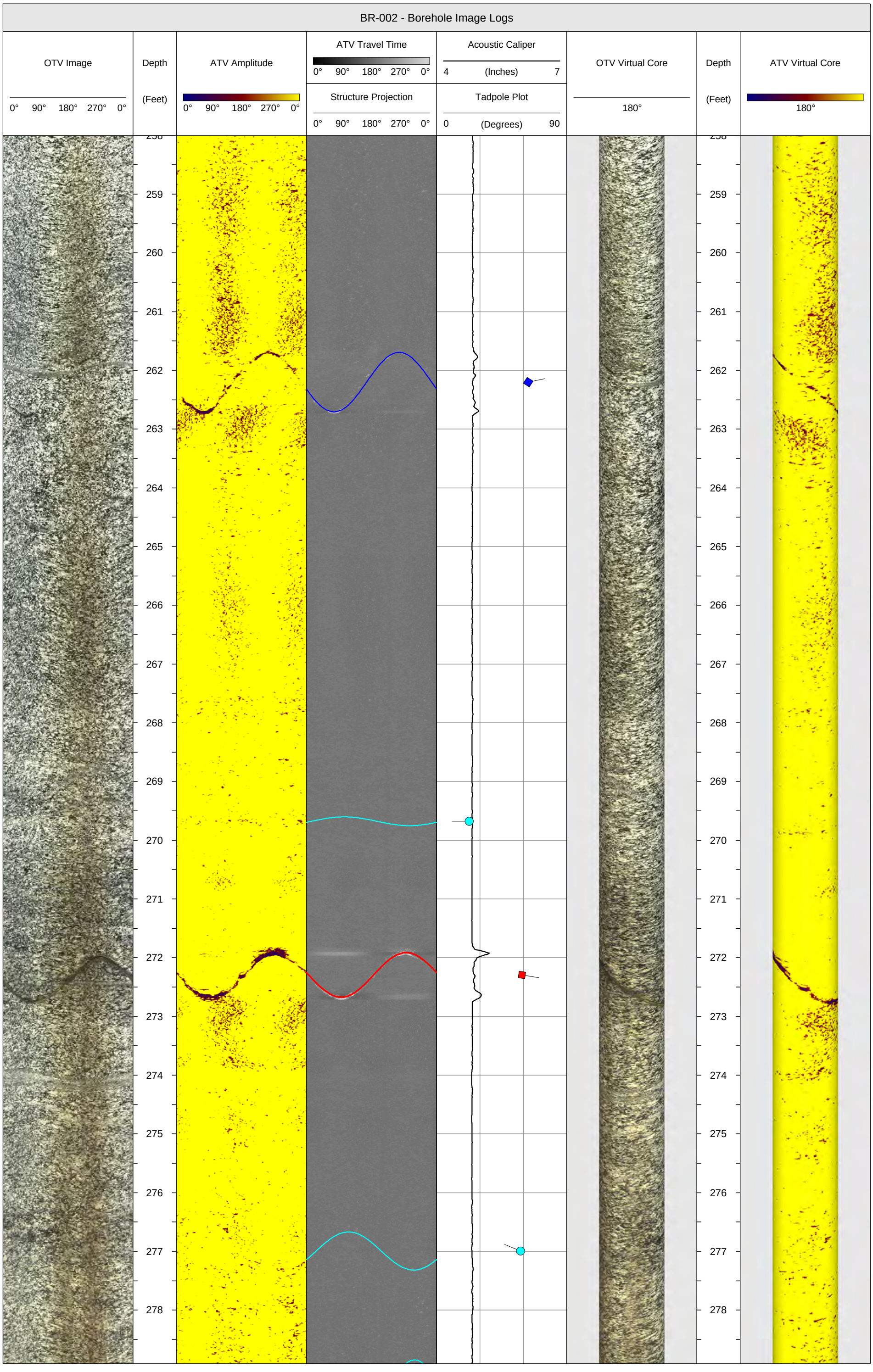
BR-002 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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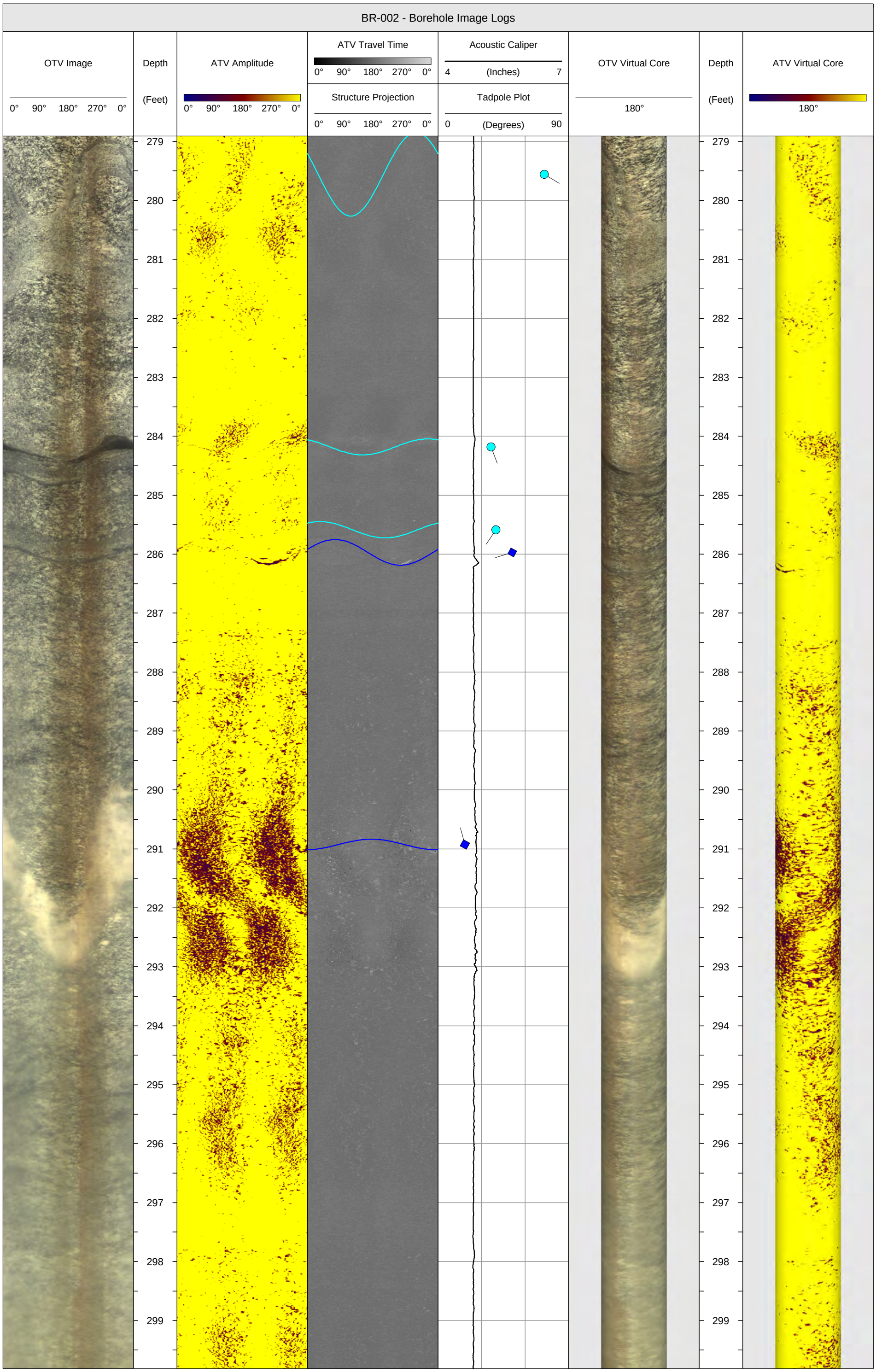
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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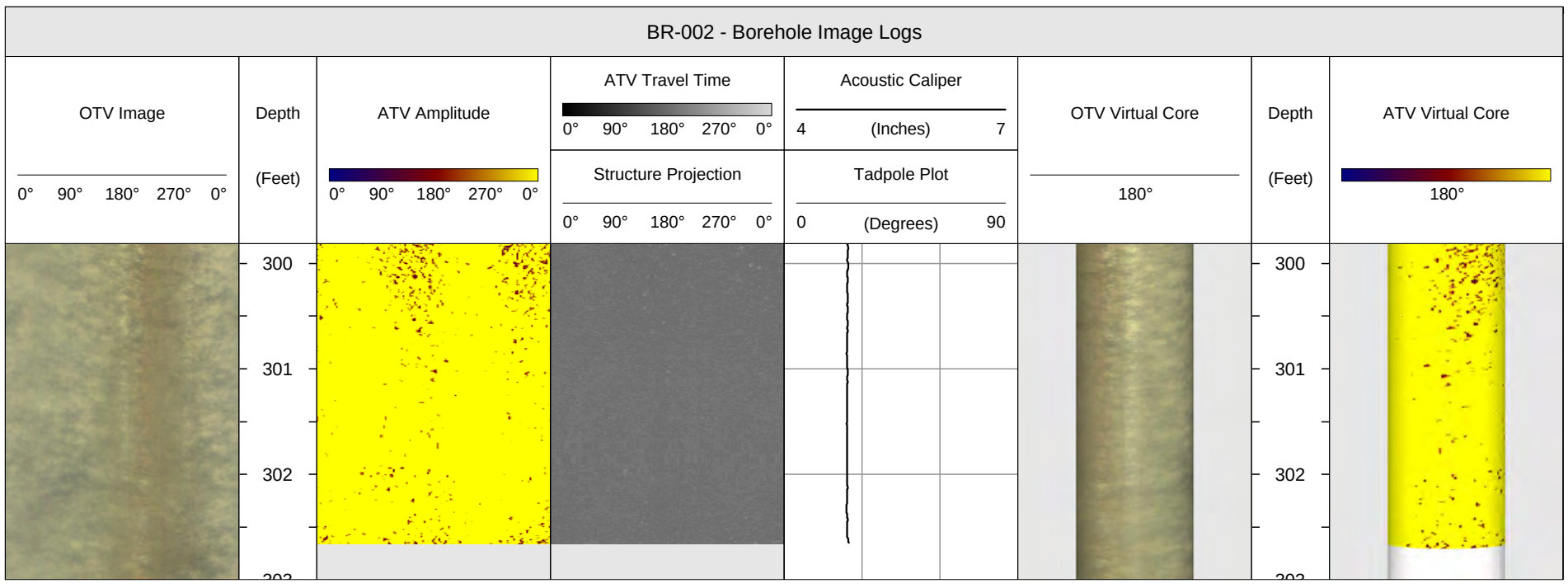
BR-002 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
300
301
302

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BR-002 - BOREHOLE GEOPHYSICAL LOGS

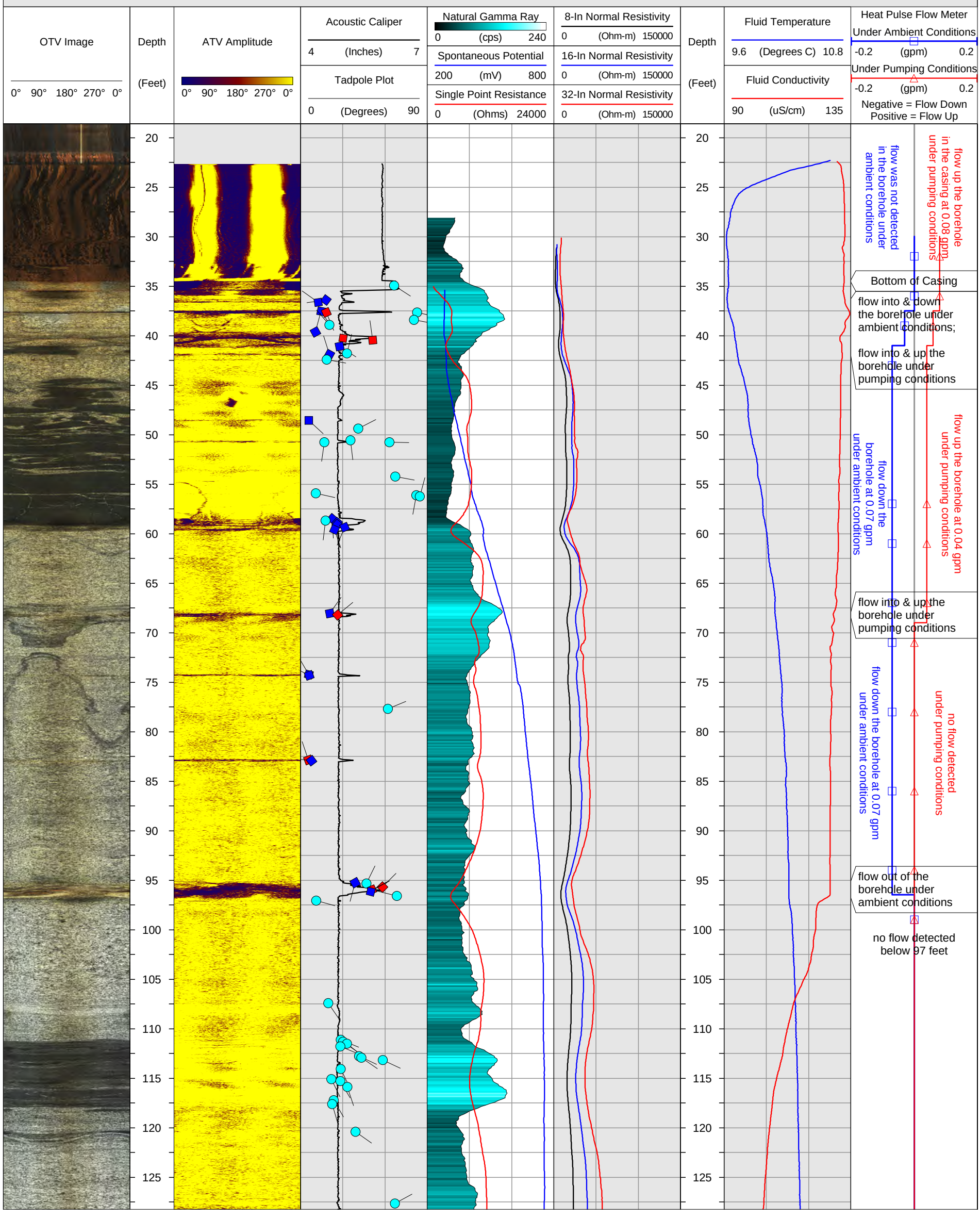
DATE(S) LOGGED: July 6 & 7, 2020

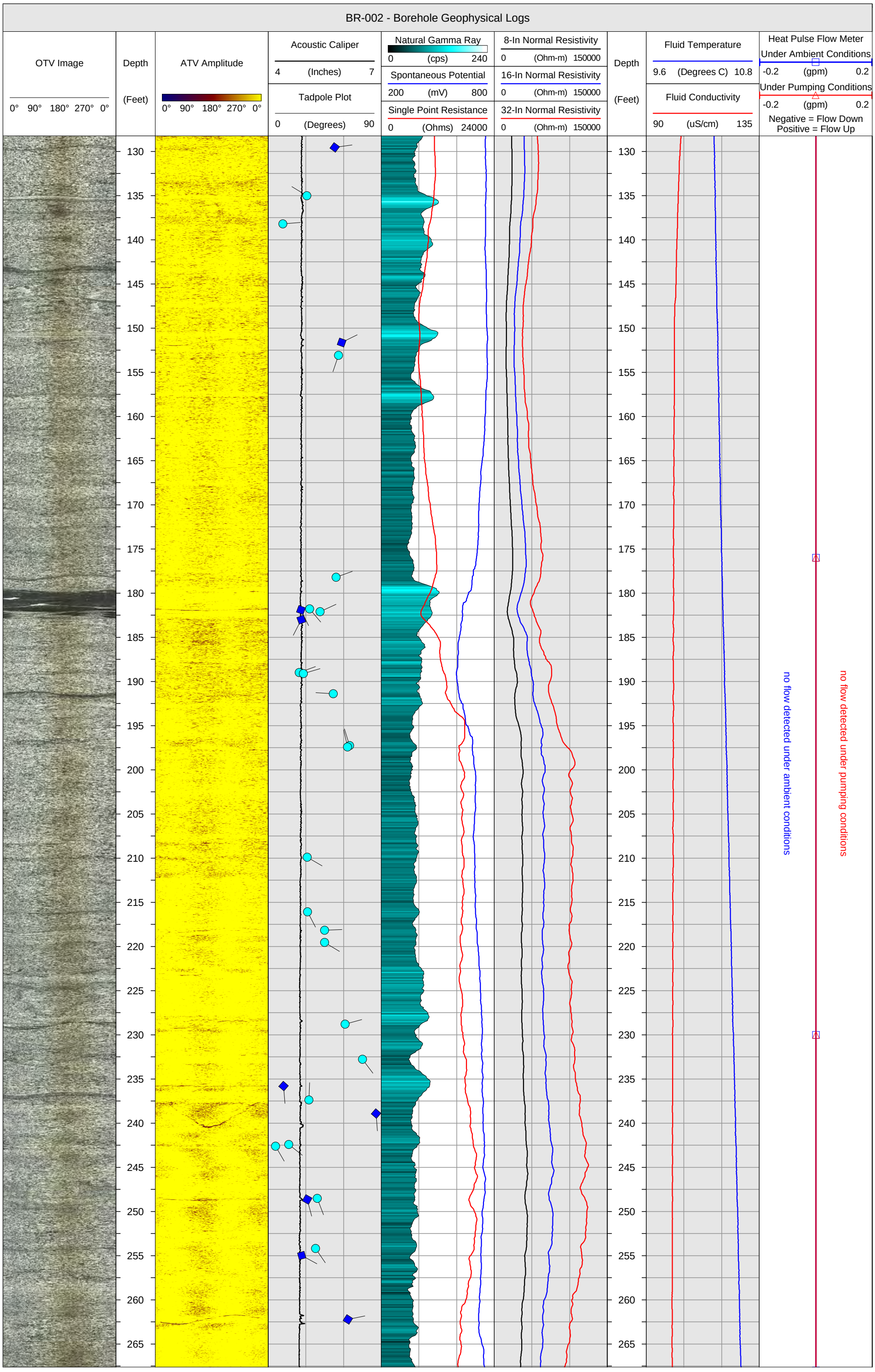
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.1 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	22.5 Feet

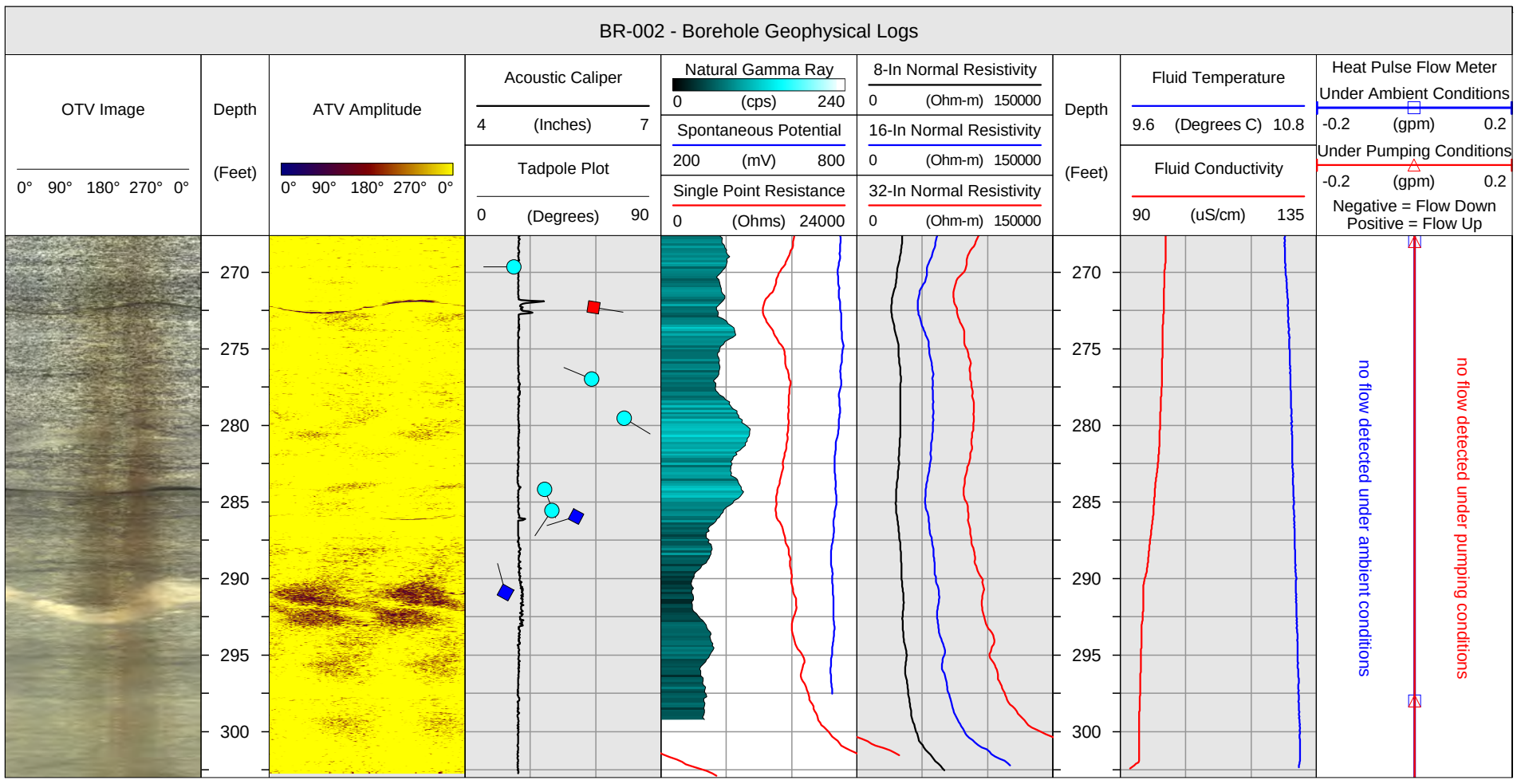
STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-002 - Borehole Geophysical Logs




BR-002 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 240
Spontaneous Potential
200 (mV) 800
Single Point Resistance
0 (Ohms) 24000
8-In Normal Resistivity
0 (Ohm-m) 150000
16-In Normal Resistivity
0 (Ohm-m) 150000
32-In Normal Resistivity
0 (Ohm-m) 150000
Depth
(Feet)
Fluid Temperature
9.6 (Degrees C) 10.8
Fluid Conductivity
90 (uS/cm) 135
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
no flow detected under ambient conditions
no flow detected under pumping conditions
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260
265


BR-002 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 240
Spontaneous Potential
200 (mV) 800
Single Point Resistance
0 (Ohms) 24000
8-In Normal Resistivity
0 (Ohm-m) 150000
16-In Normal Resistivity
0 (Ohm-m) 150000
32-In Normal Resistivity
0 (Ohm-m) 150000
Depth
(Feet)
Fluid Temperature
9.6 (Degrees C) 10.8
Fluid Conductivity
90 (uS/cm) 135
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
270
275
280
285
290
295
300
no flow detected under ambient conditions
no flow detected under pumping conditions

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Fords, New Jersey
Tel: 732.661.0555

BR-003 - BOREHOLE IMAGE LOGS

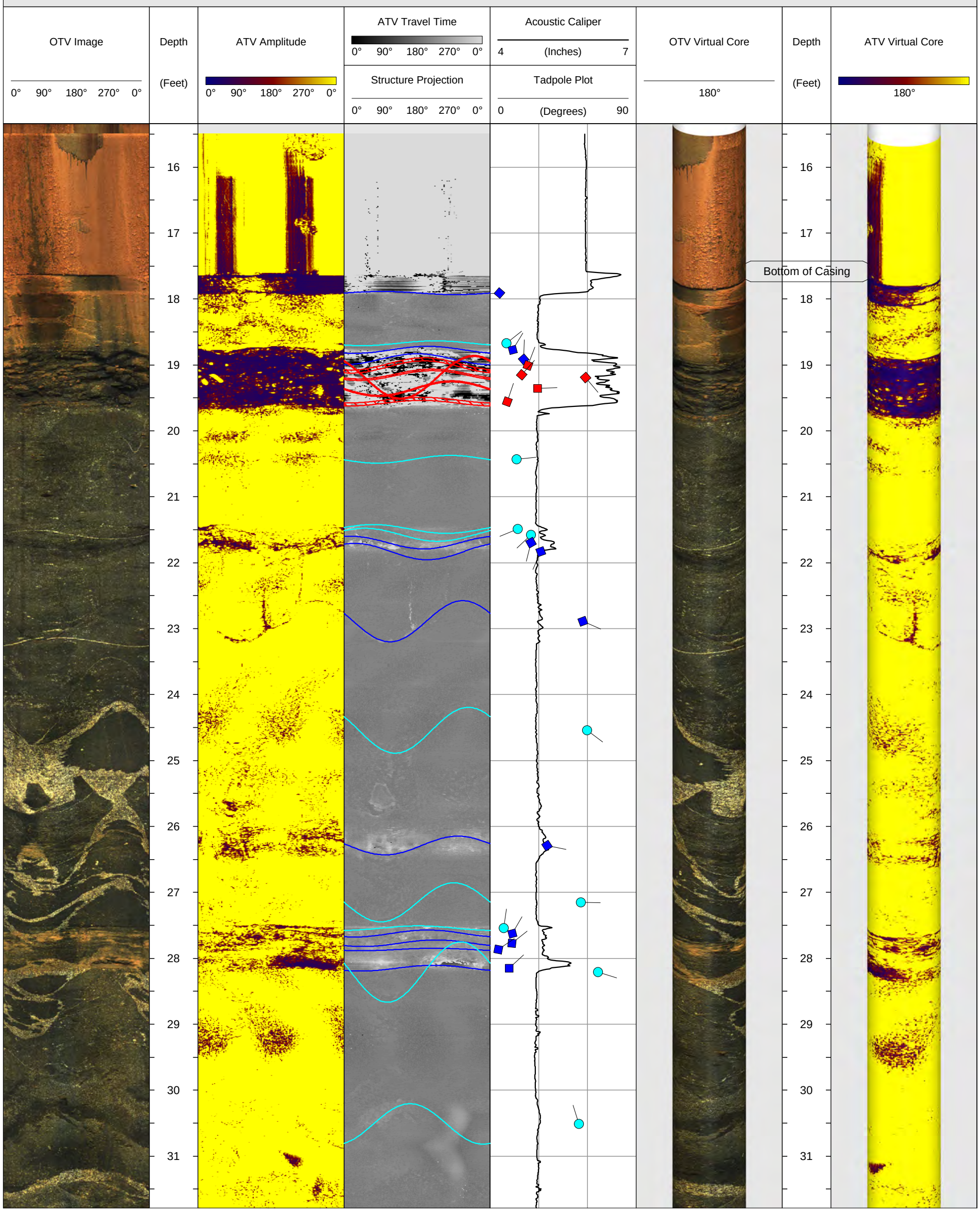
DATE(S) LOGGED: July 7 & 8, 2020

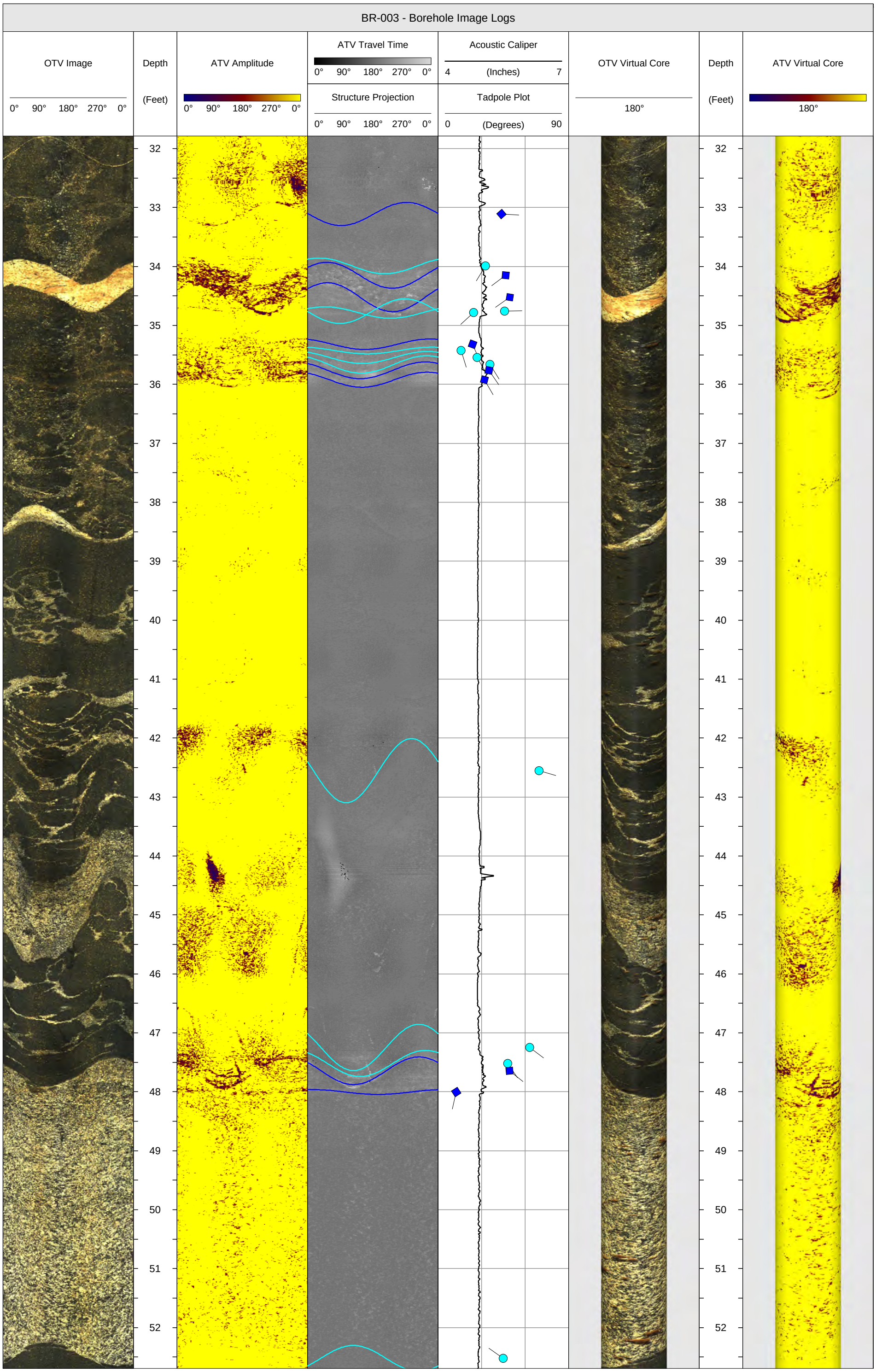
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.1 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	15.0 Feet

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-003 - Borehole Image Logs




BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
32
33
34
35
36
37
38
39
40
41
42
43
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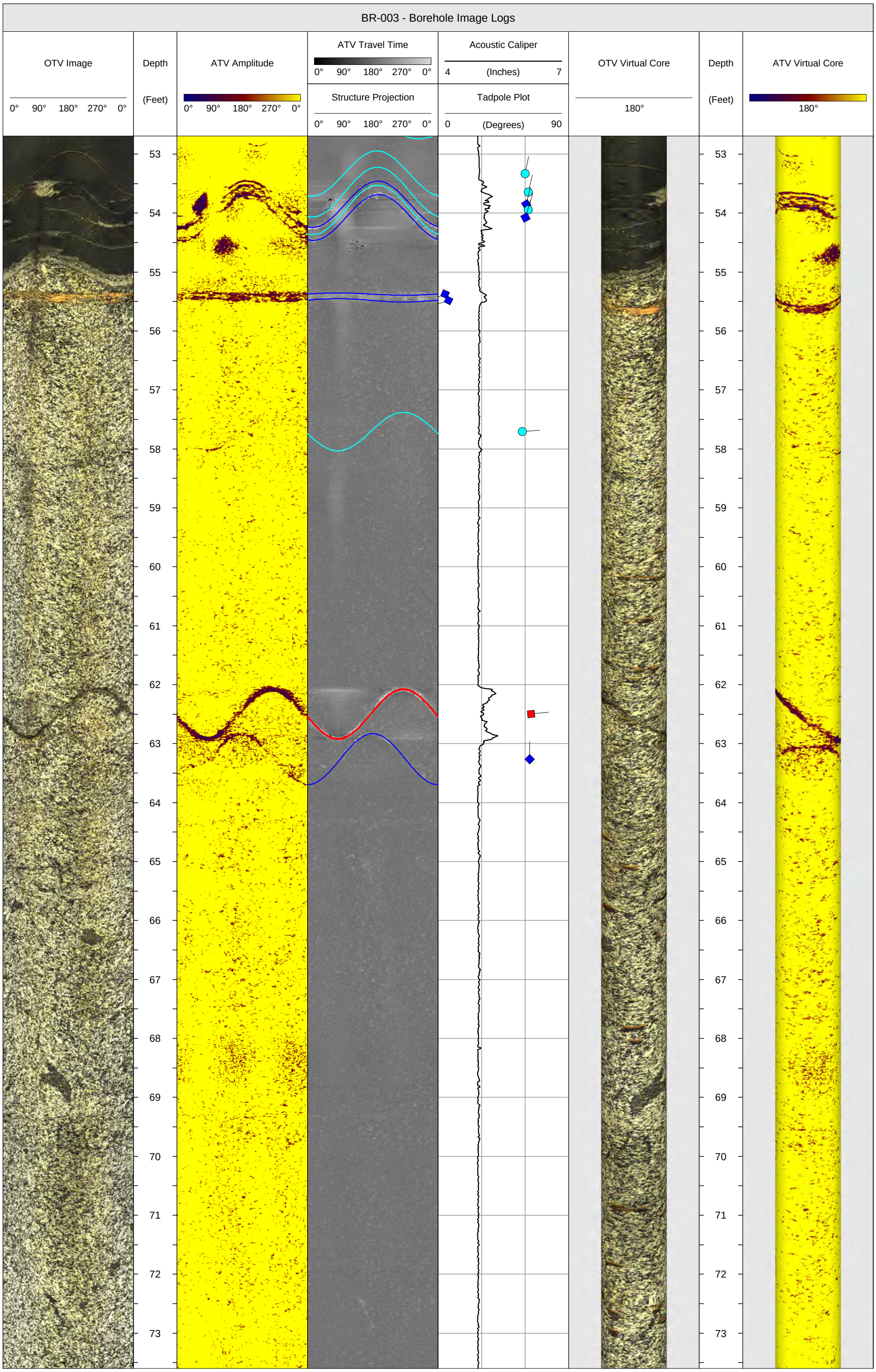
49
50
51
52


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
53
54
55
56
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58
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61
62
63
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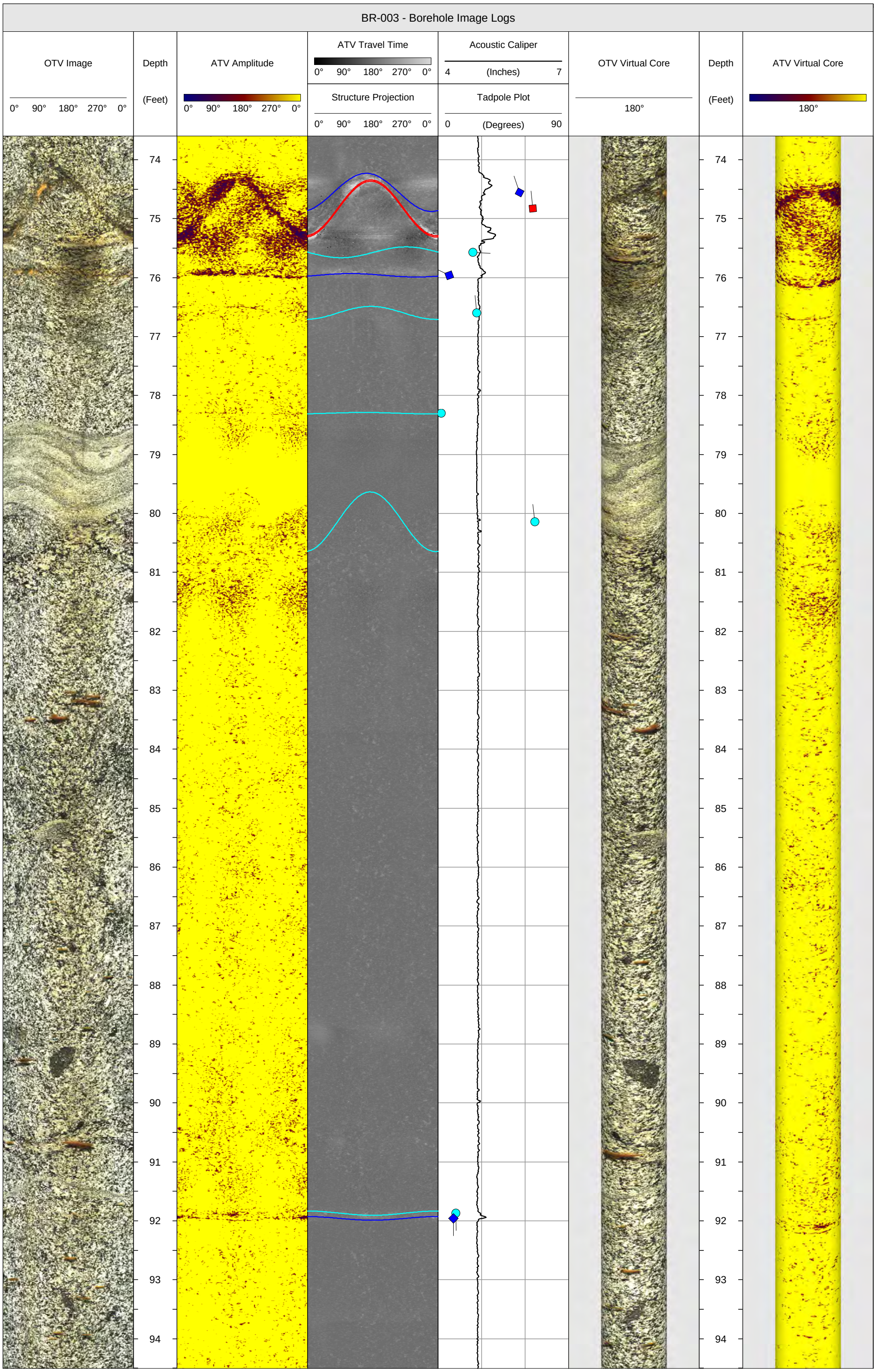
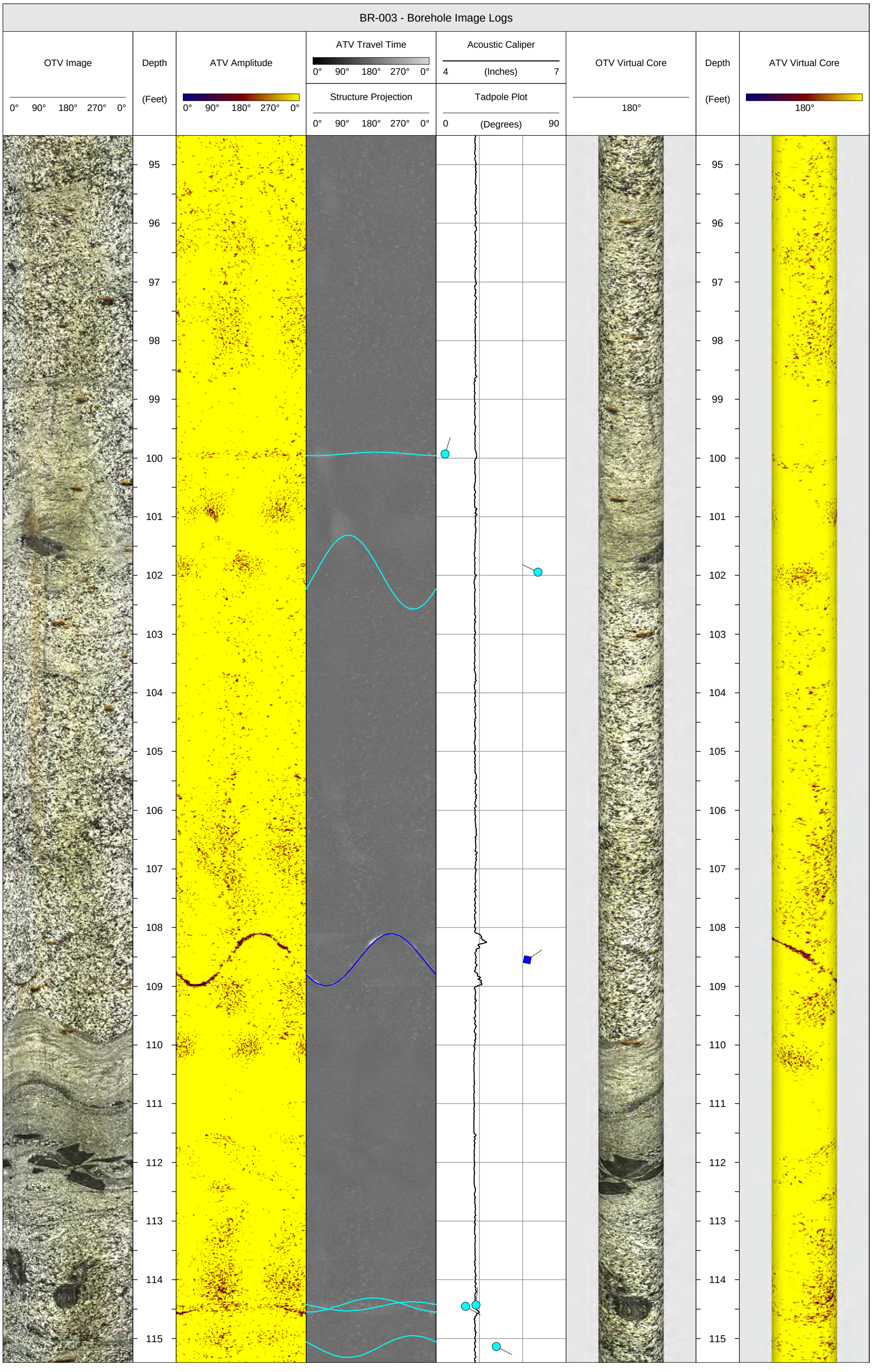
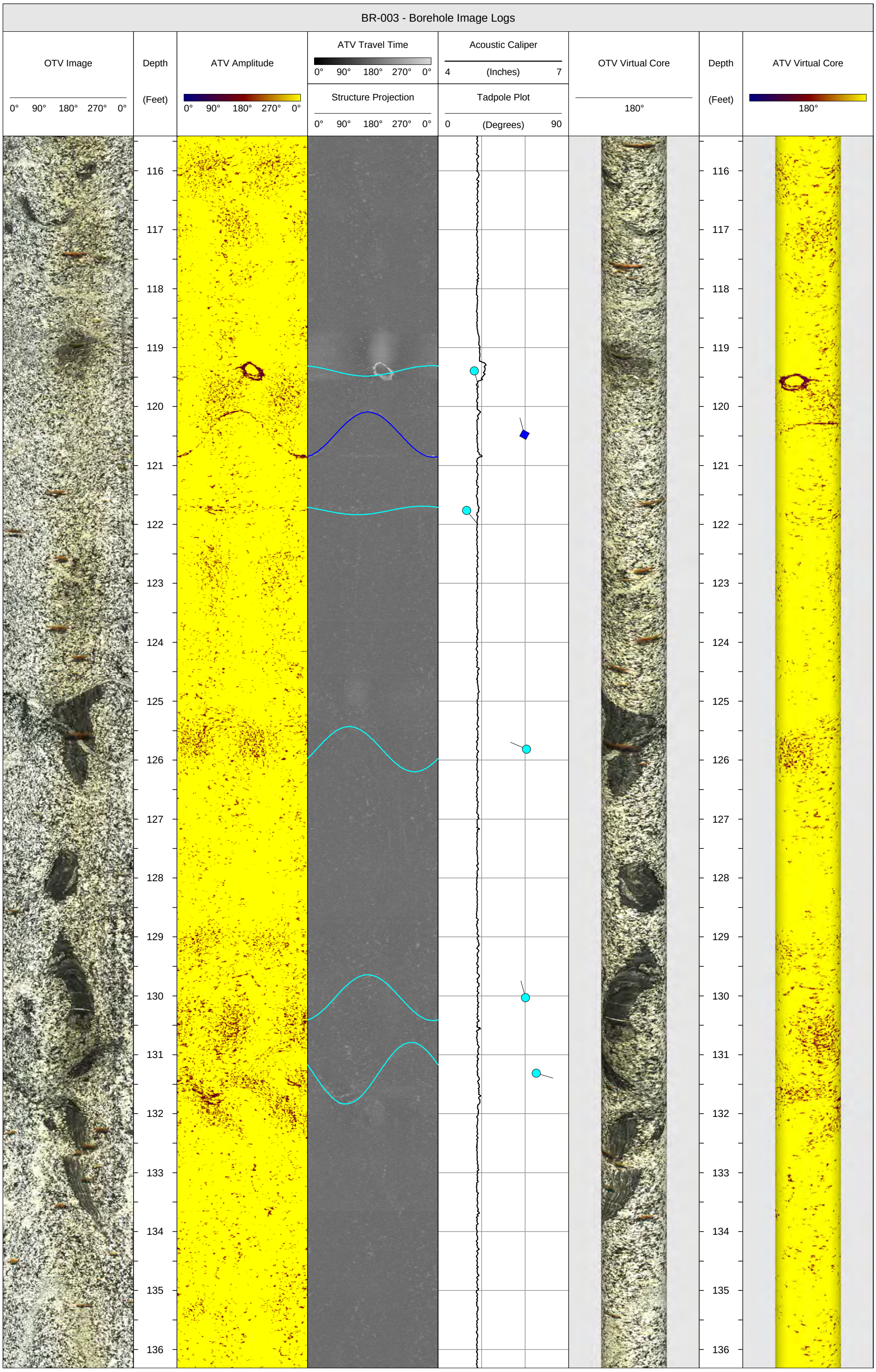
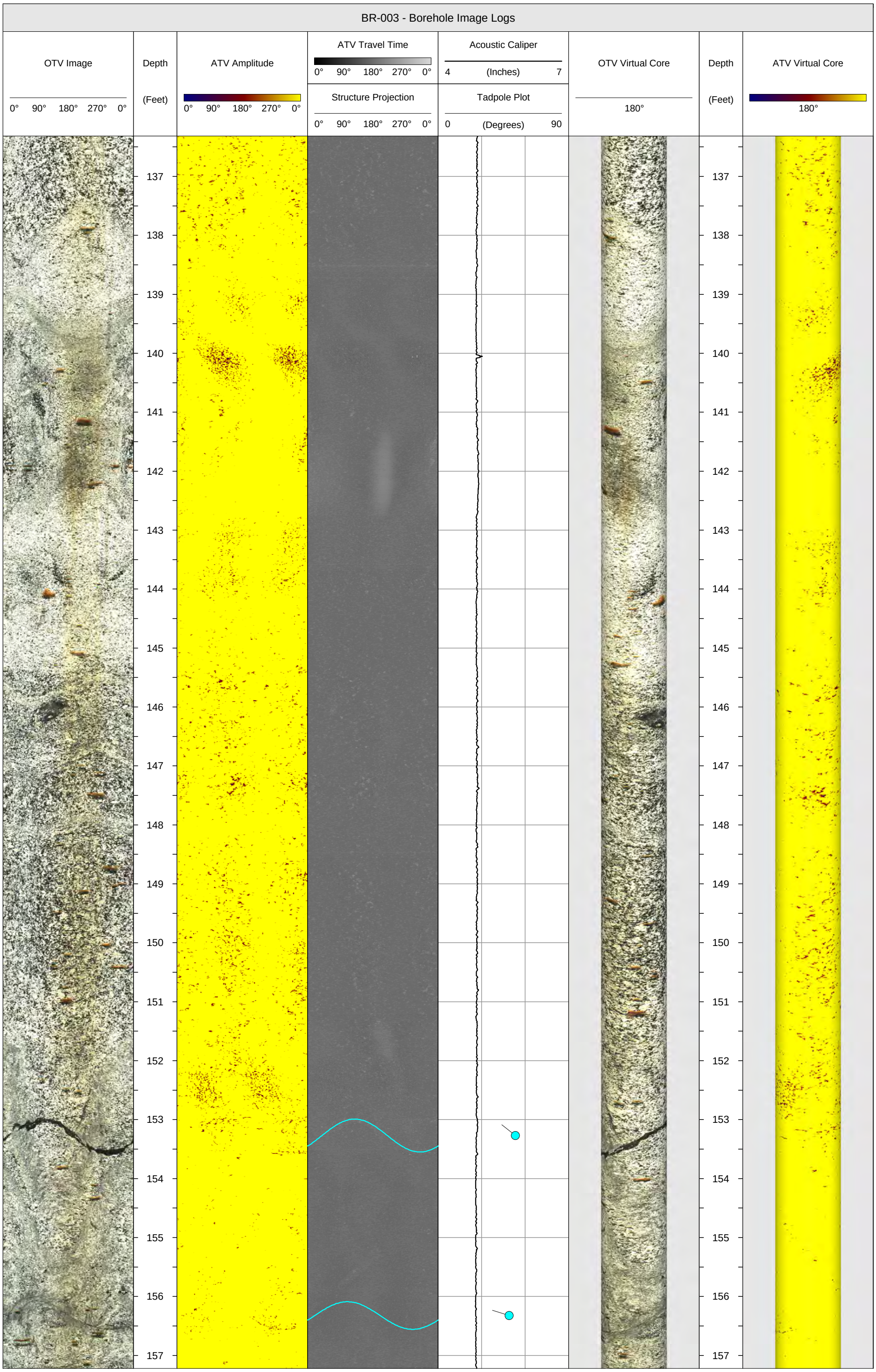
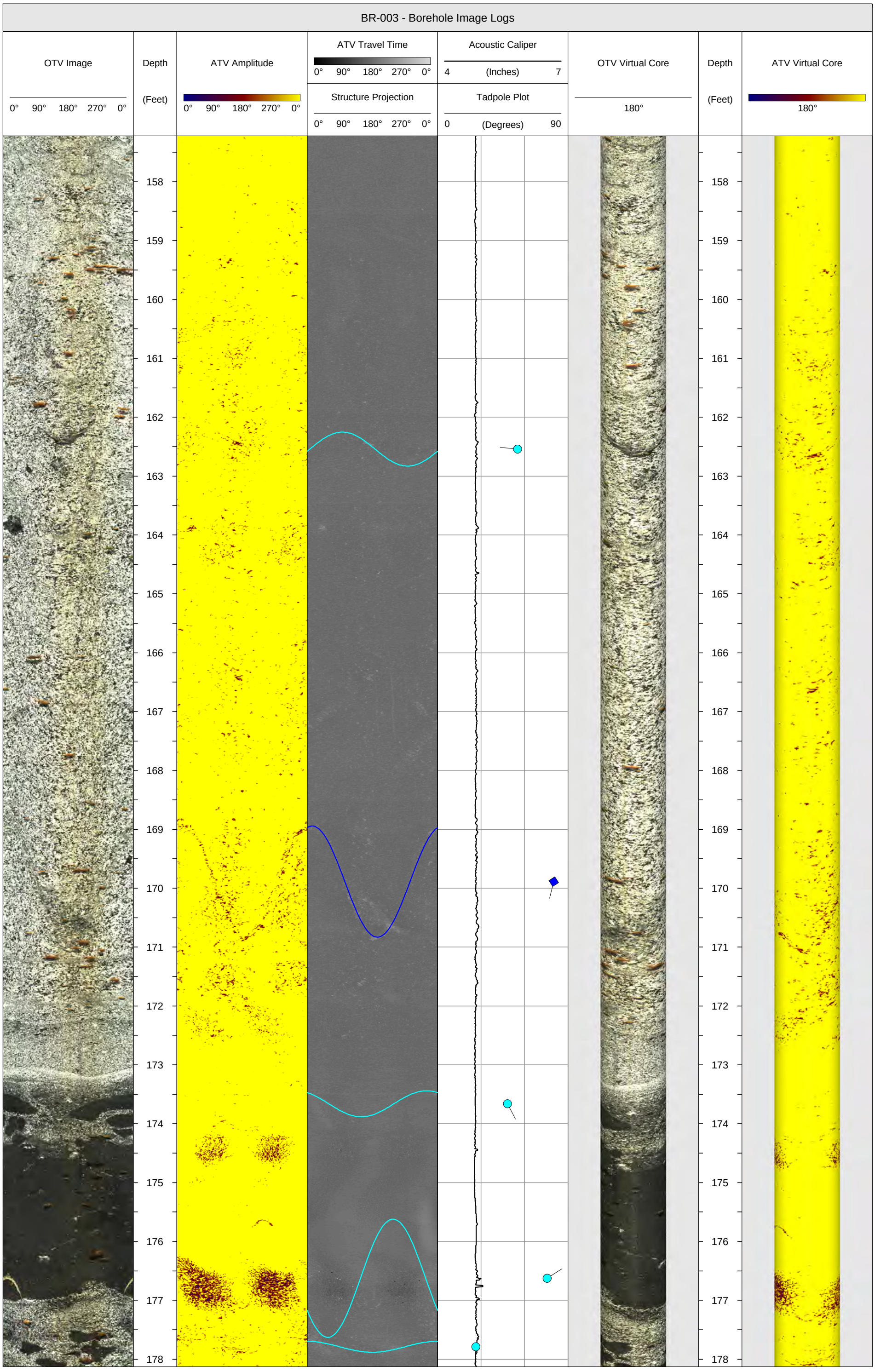
70
71
72
73


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
158
159
160
161
162
163
164
165
166
167
168
169
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171
172
173
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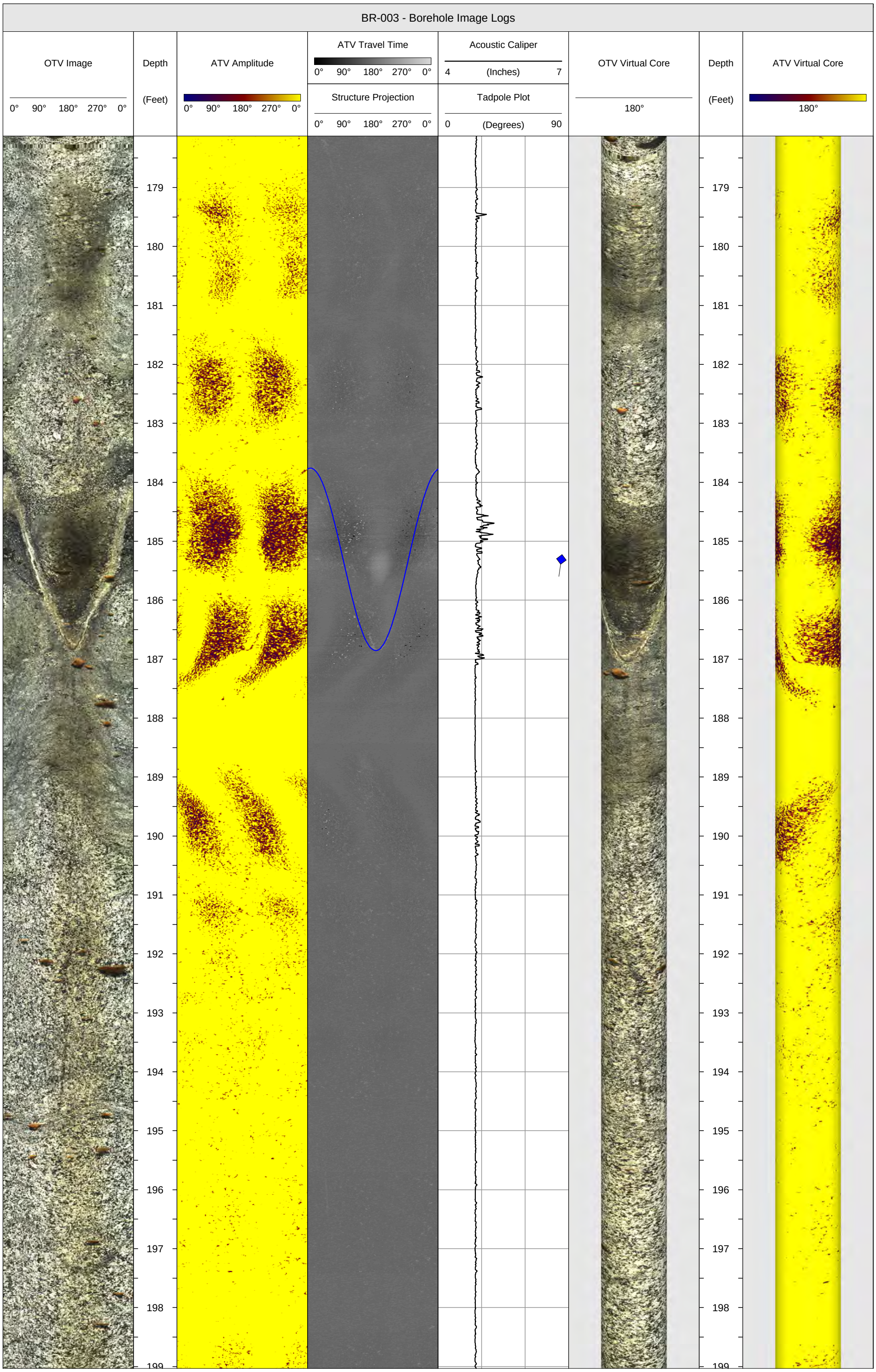
175
176
177
178


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
179
180
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182
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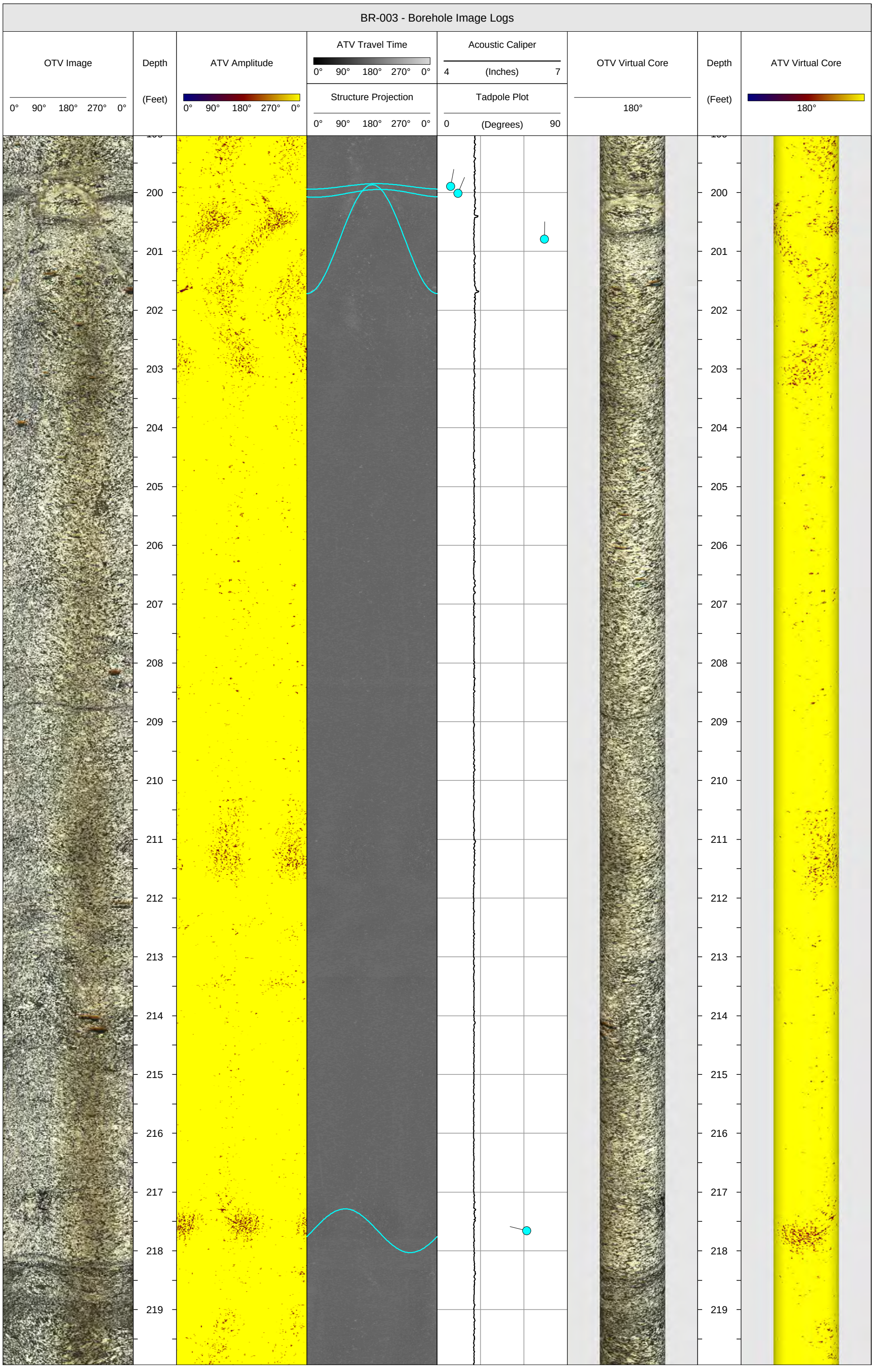
BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
200
201
202
203
204
205
206
207
208
209
210
211
212
213
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215
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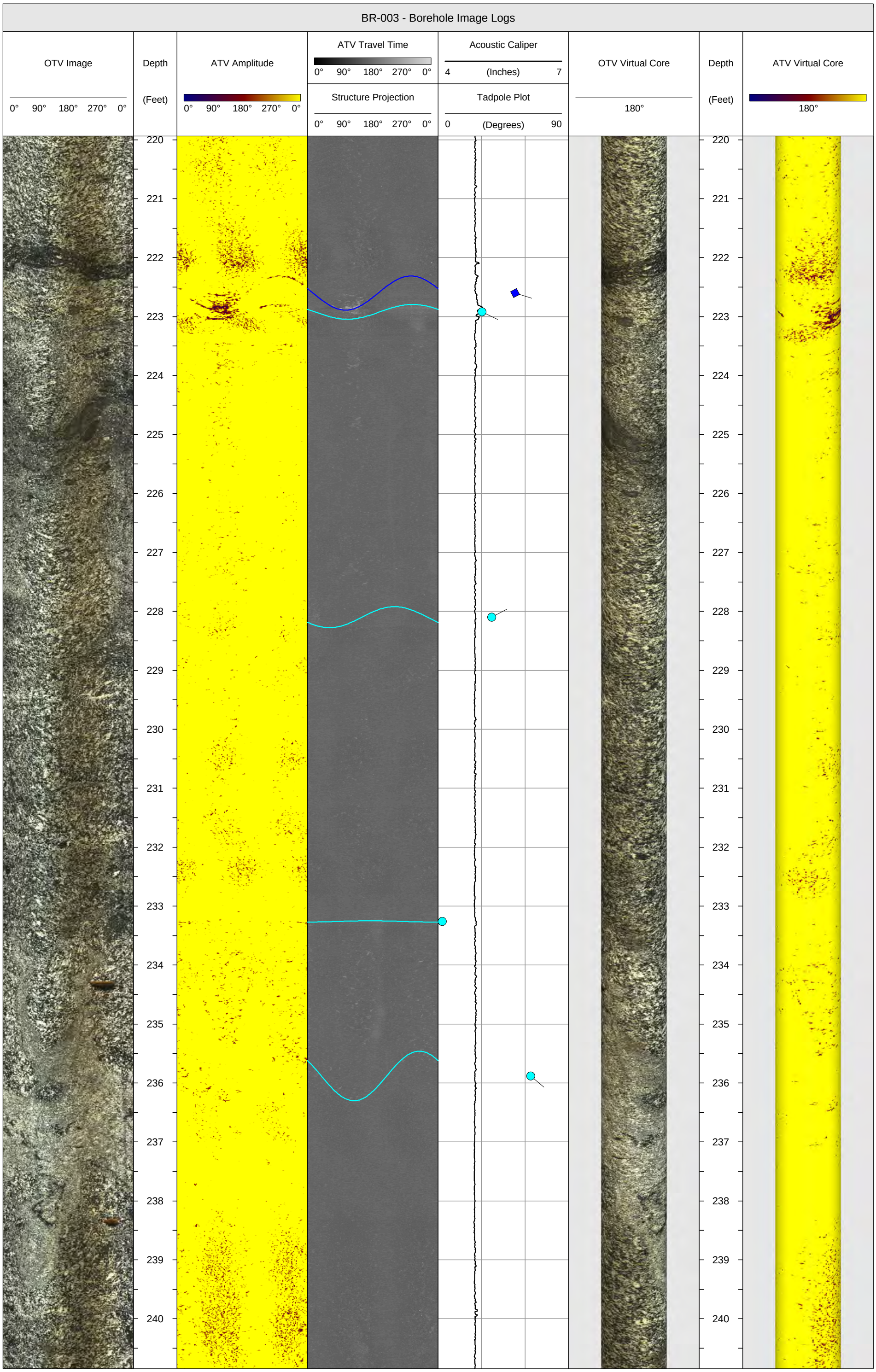
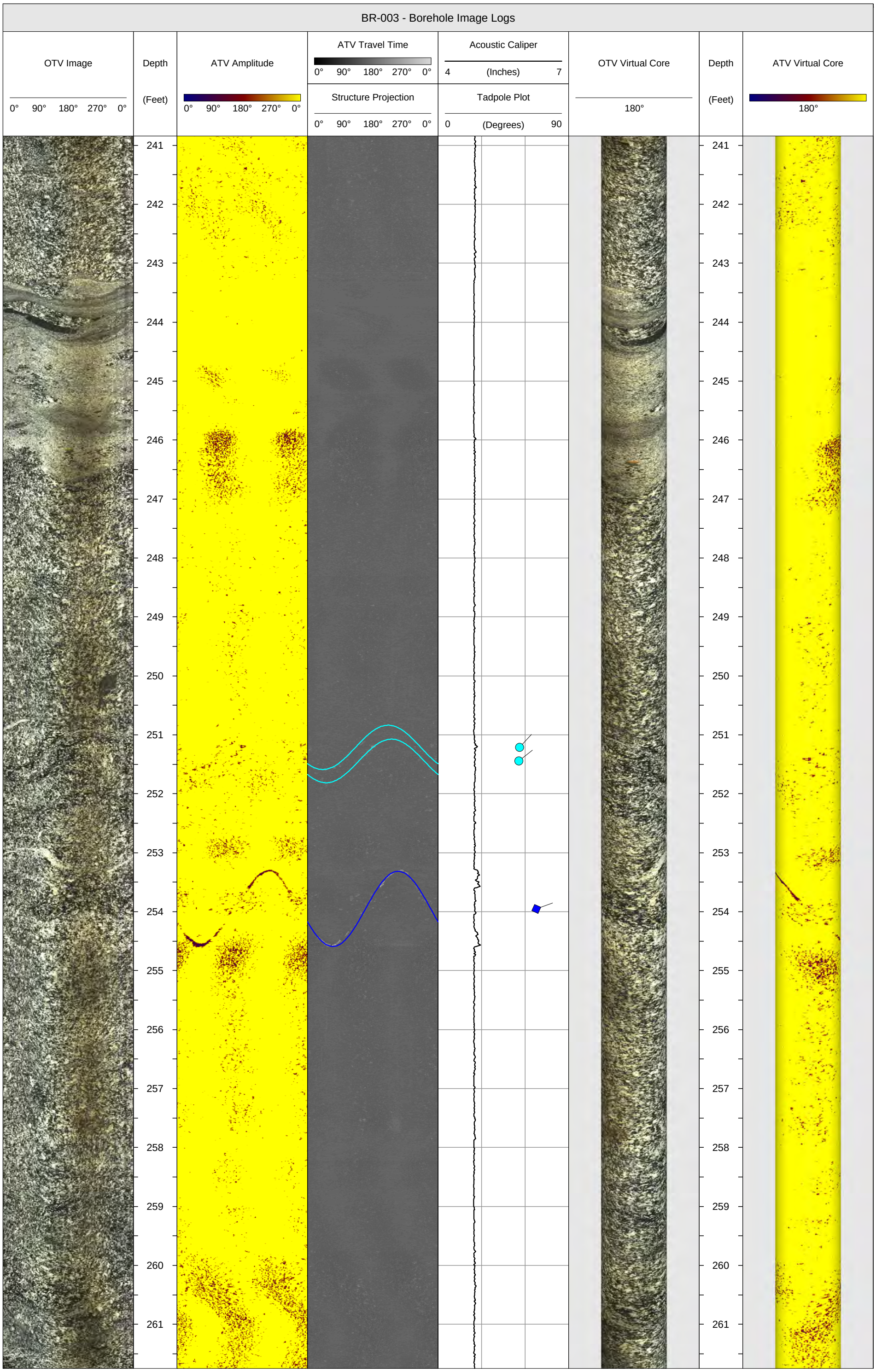
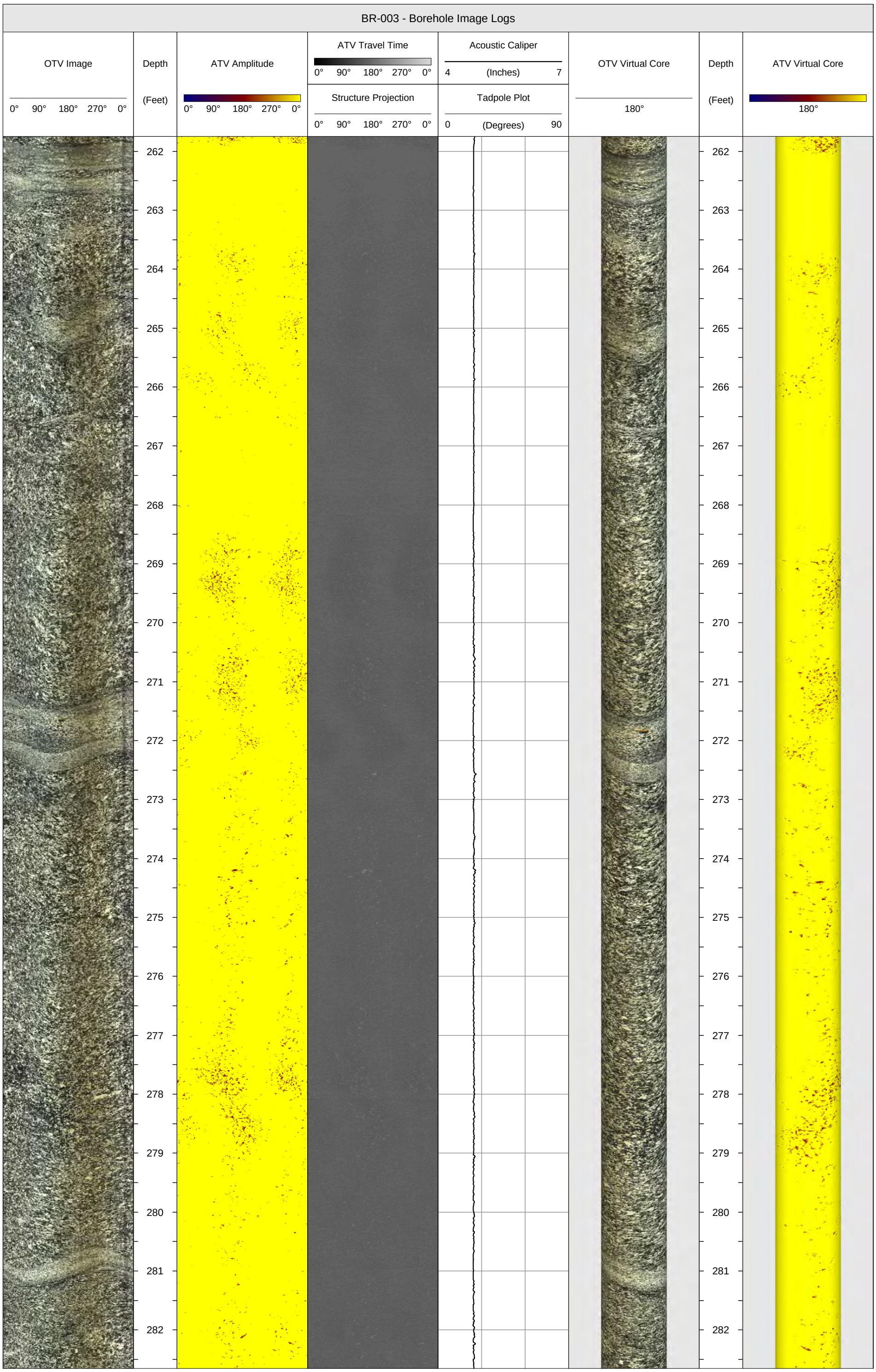
217
218
219


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261


BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
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278
279
280
281
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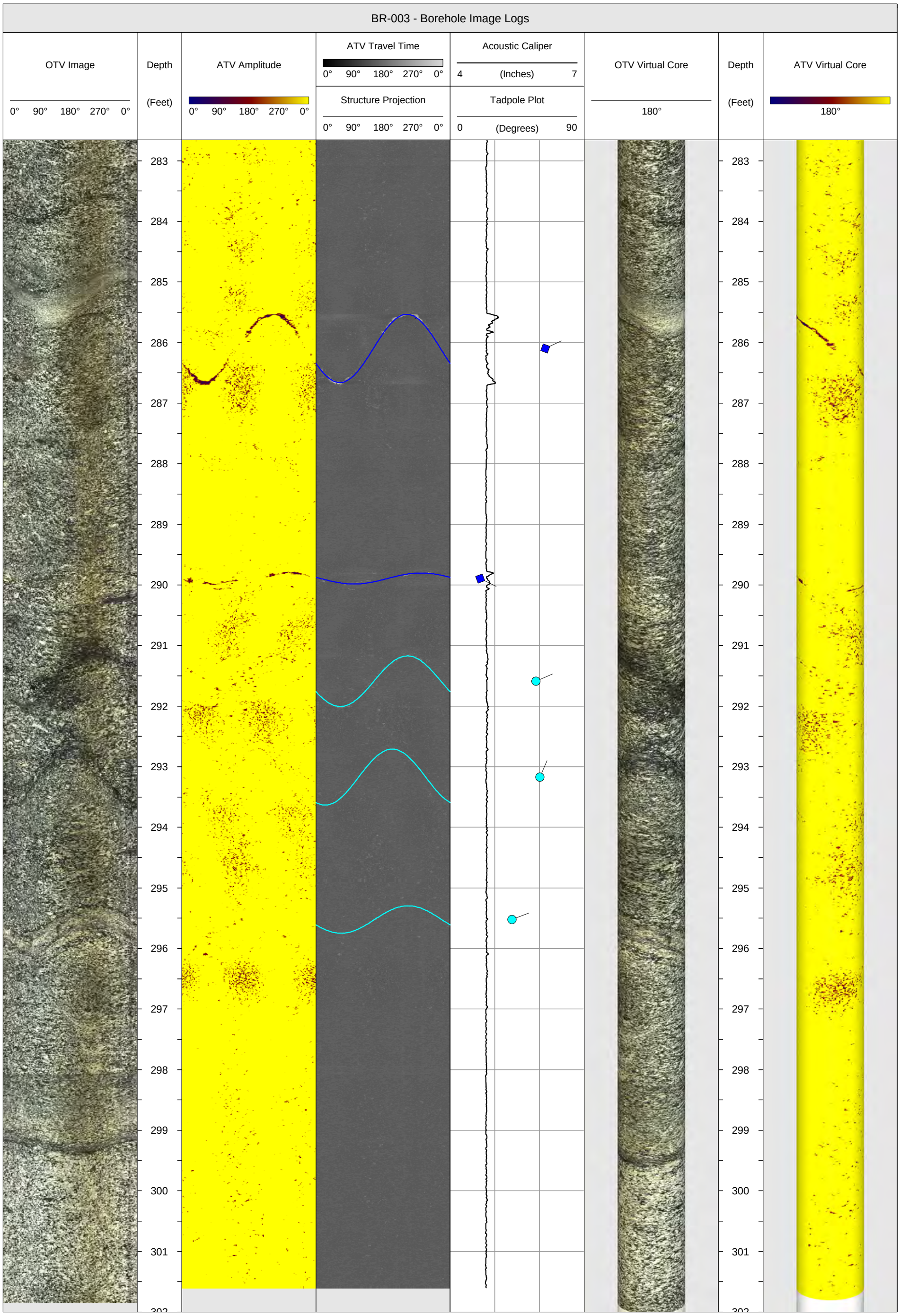
BR-003 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301

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Fords, New Jersey
Tel: 732.661.0555

BR-003 - BOREHOLE GEOPHYSICAL LOGS

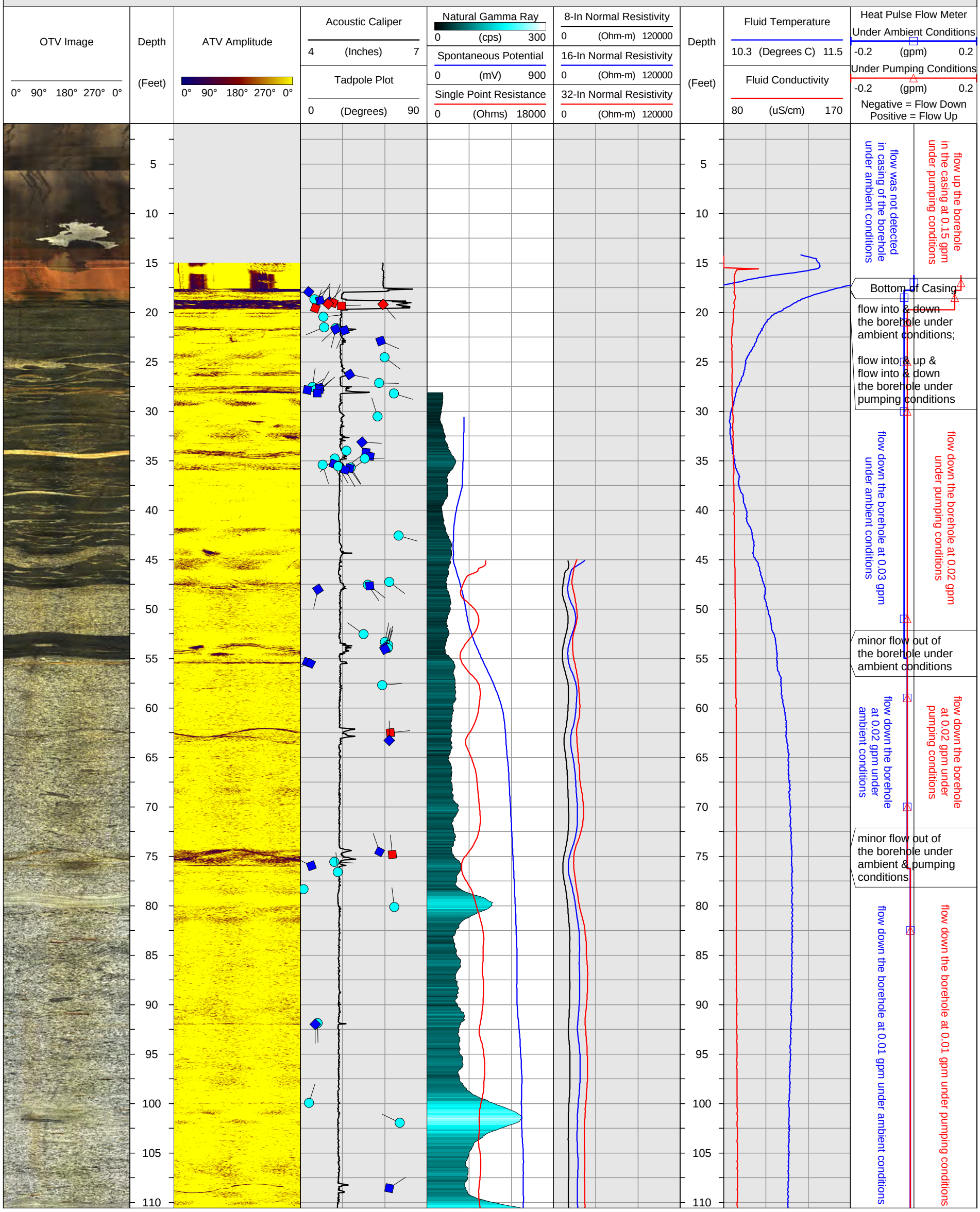
DATE(S) LOGGED: July 7 & 8, 2020

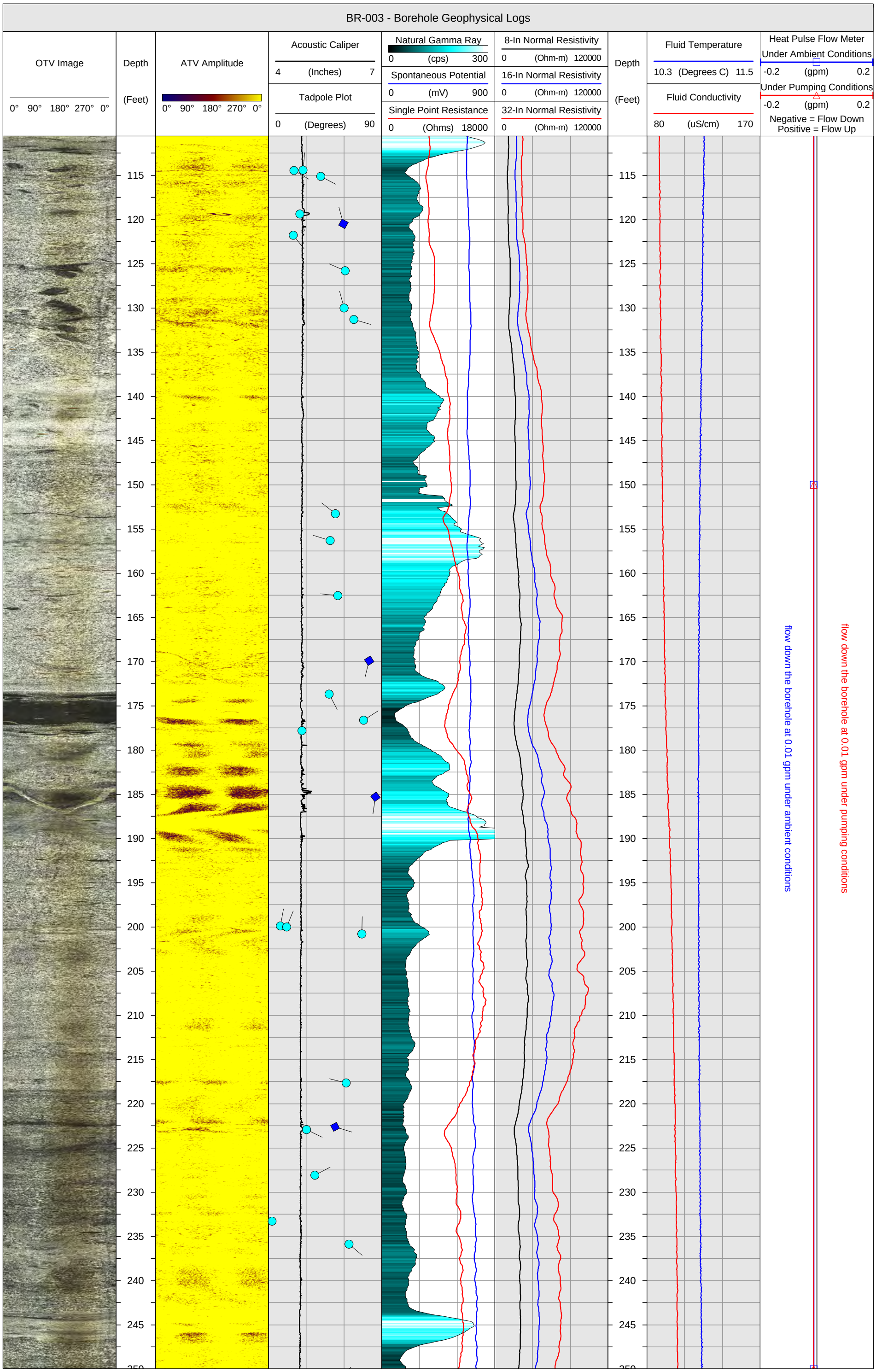
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.1 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	15.0 Feet

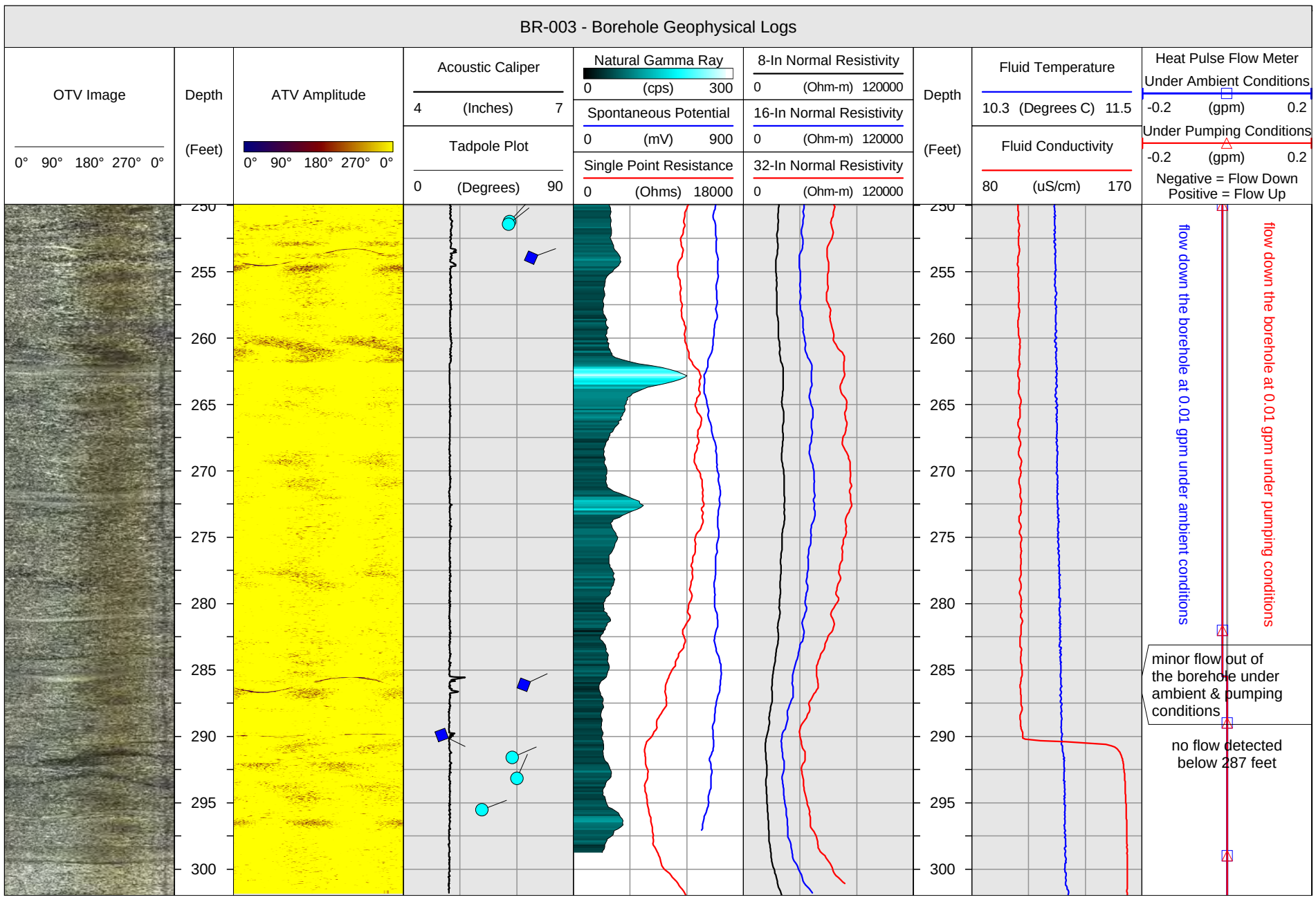
STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-003 - Borehole Geophysical Logs




BR-003 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 300
Spontaneous Potential
0 (mV) 900
Single Point Resistance
0 (Ohms) 18000
8-In Normal Resistivity
0 (Ohm-m) 120000
16-In Normal Resistivity
0 (Ohm-m) 120000
32-In Normal Resistivity
0 (Ohm-m) 120000
Depth
(Feet)
Fluid Temperature
10.3 (Degrees C) 11.5
Fluid Conductivity
80 (uS/cm) 170
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
115
120
125
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
flow down the borehole at 0.01 gpm under ambient conditions
flow down the borehole at 0.01 gpm under pumping conditions


BR-003 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 300
Spontaneous Potential
0 (mV) 900
Single Point Resistance
0 (Ohms) 18000
8-In Normal Resistivity
0 (Ohm-m) 120000
16-In Normal Resistivity
0 (Ohm-m) 120000
32-In Normal Resistivity
0 (Ohm-m) 120000
Depth
(Feet)
Fluid Temperature
10.3 (Degrees C) 11.5
Fluid Conductivity
80 (uS/cm) 170
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
250
255
260
265
270
275
280
285
290
295
300
flow down the borehole at 0.01 gpm under ambient conditions
flow down the borehole at 0.01 gpm under pumping conditions
minor flow out of the borehole under ambient & pumping conditions
no flow detected below 287 feet

HAGER-RICHTER GEOSCIENCE, INC.

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Fords, New Jersey
Tel: 732.661.0555

BR-004 - BOREHOLE IMAGE LOGS

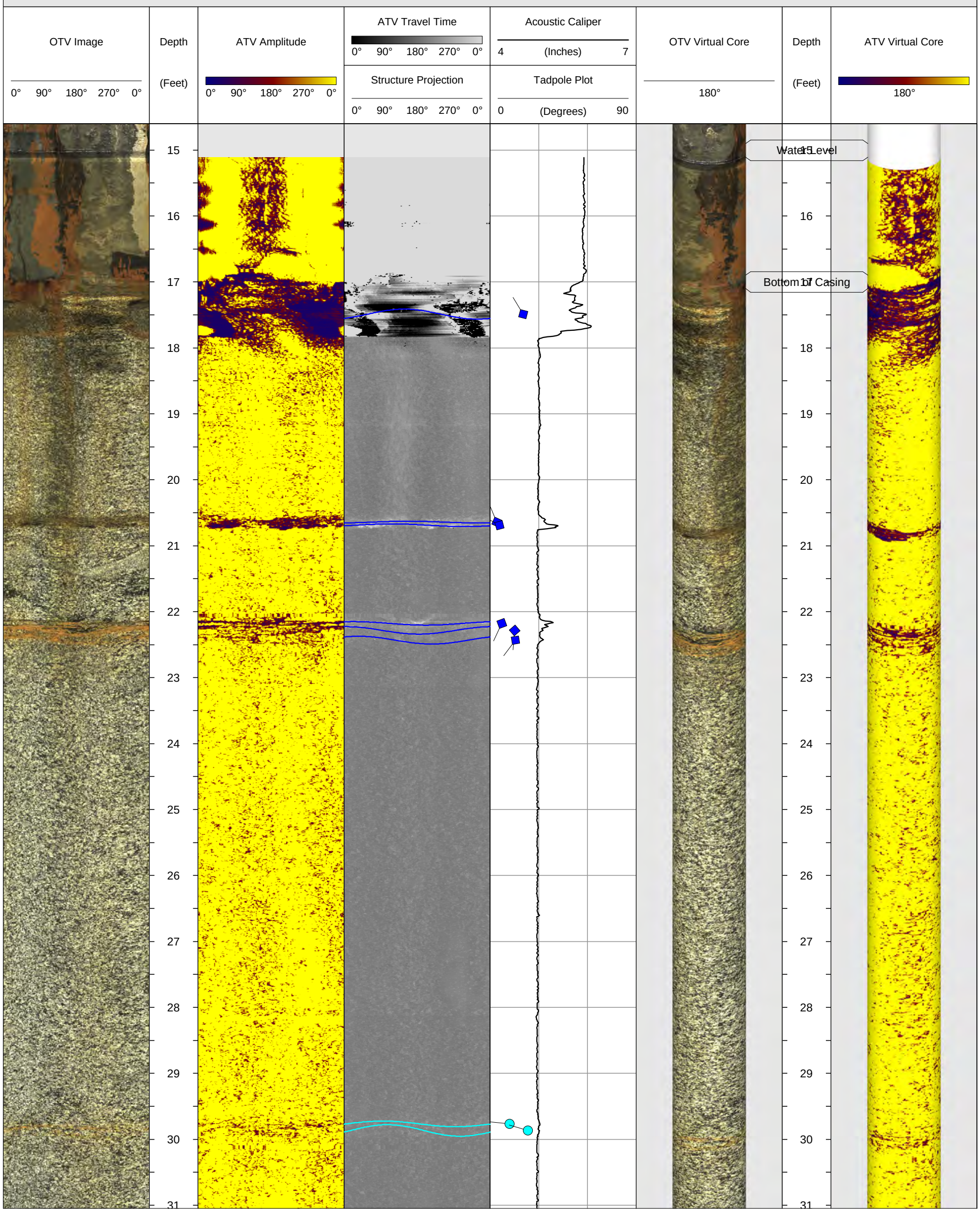
DATE(S) LOGGED: July 6 & 7, 2020

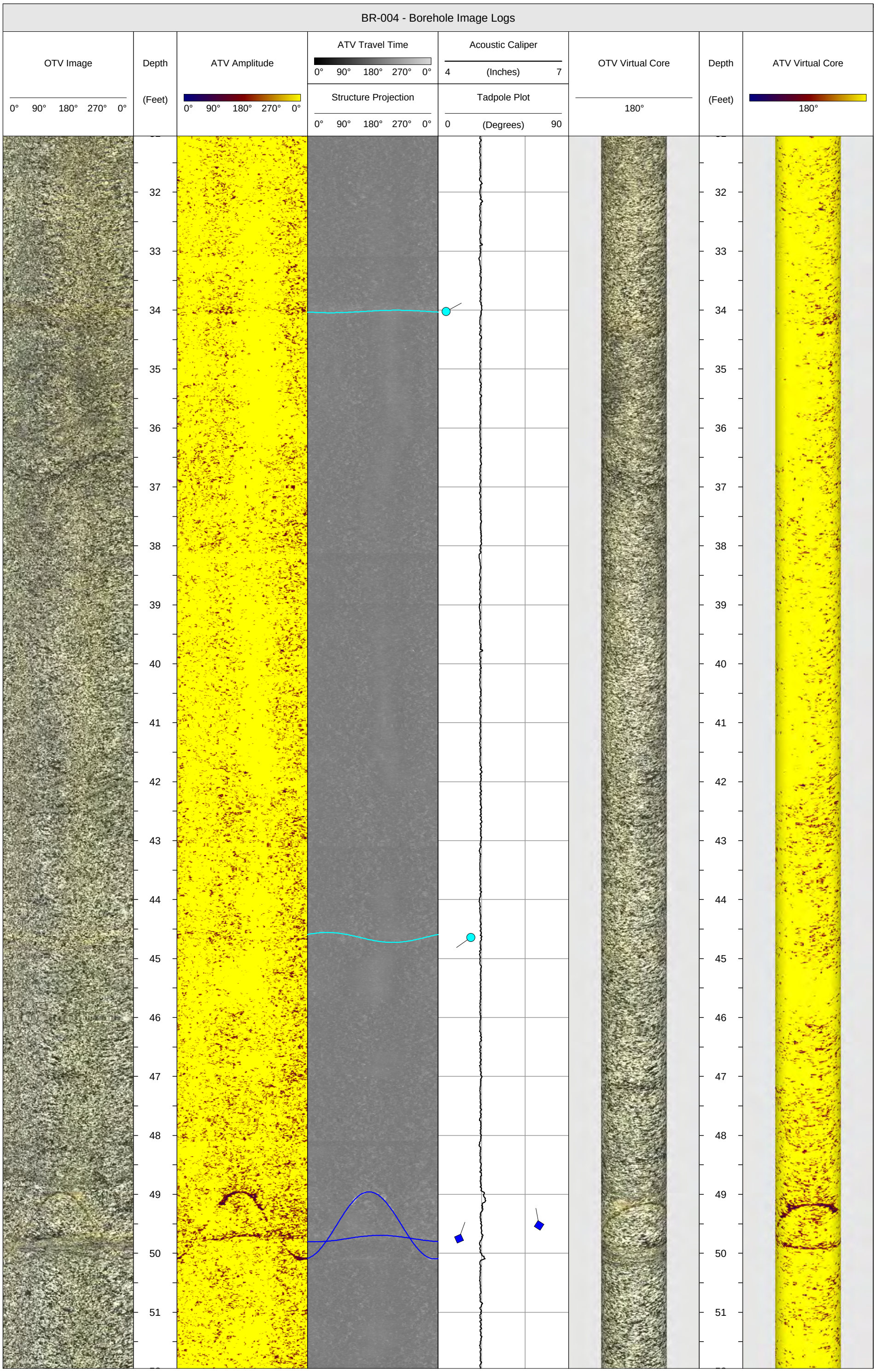
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	2.3 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	15.1 Feet

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2

BR-004 - Borehole Image Logs




BR-004 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
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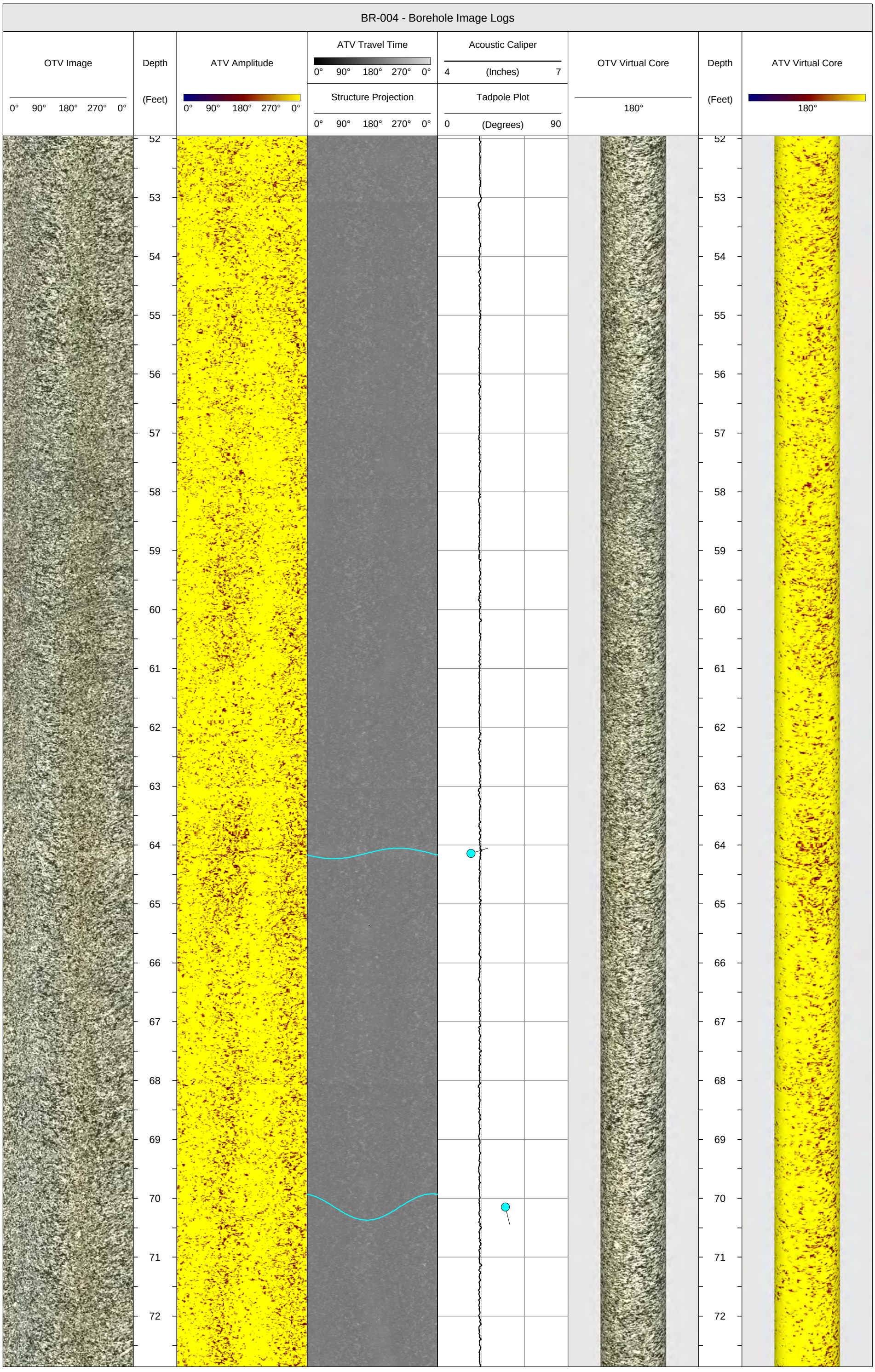
BR-004 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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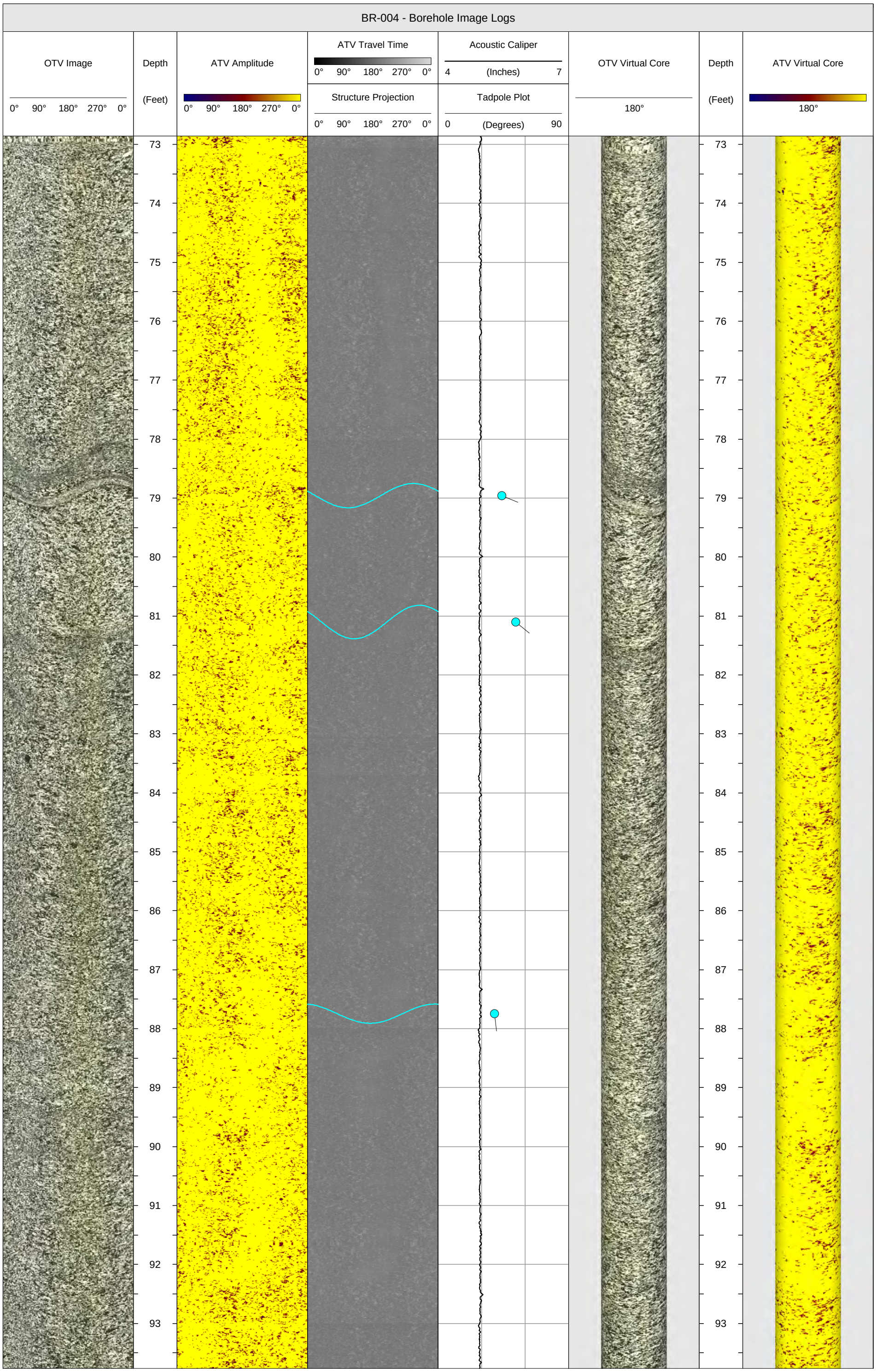
BR-004 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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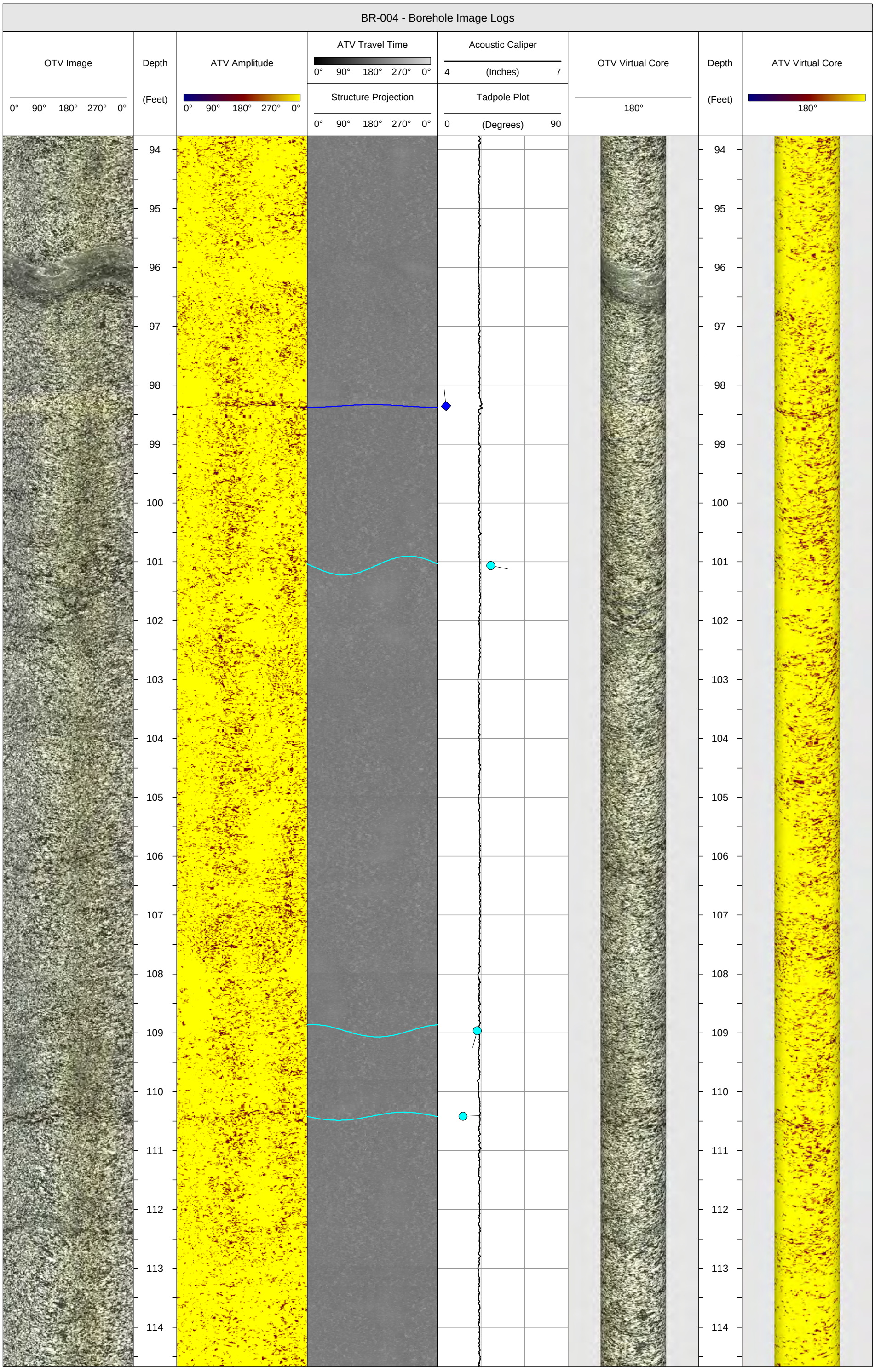
BR-004 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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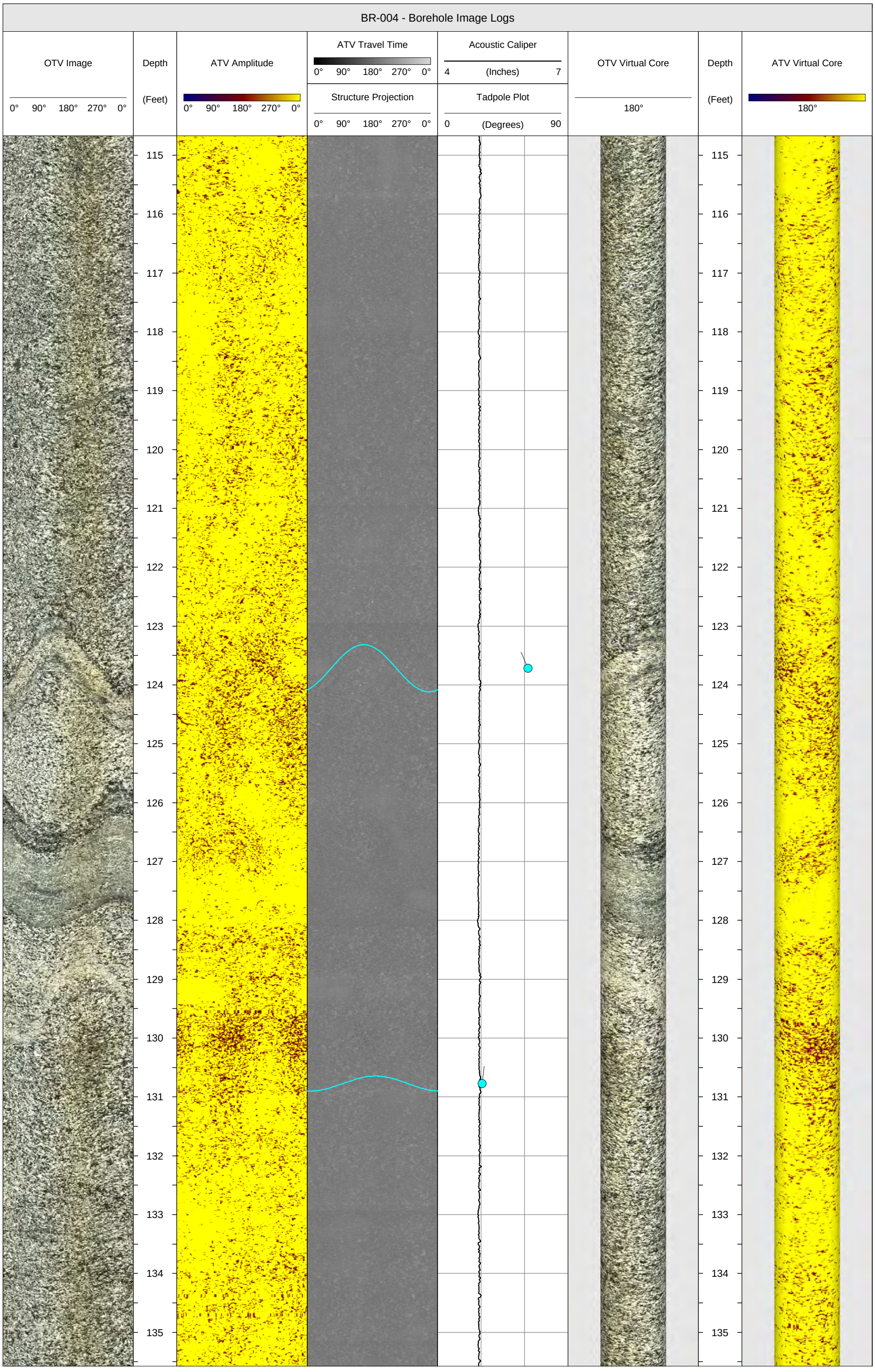
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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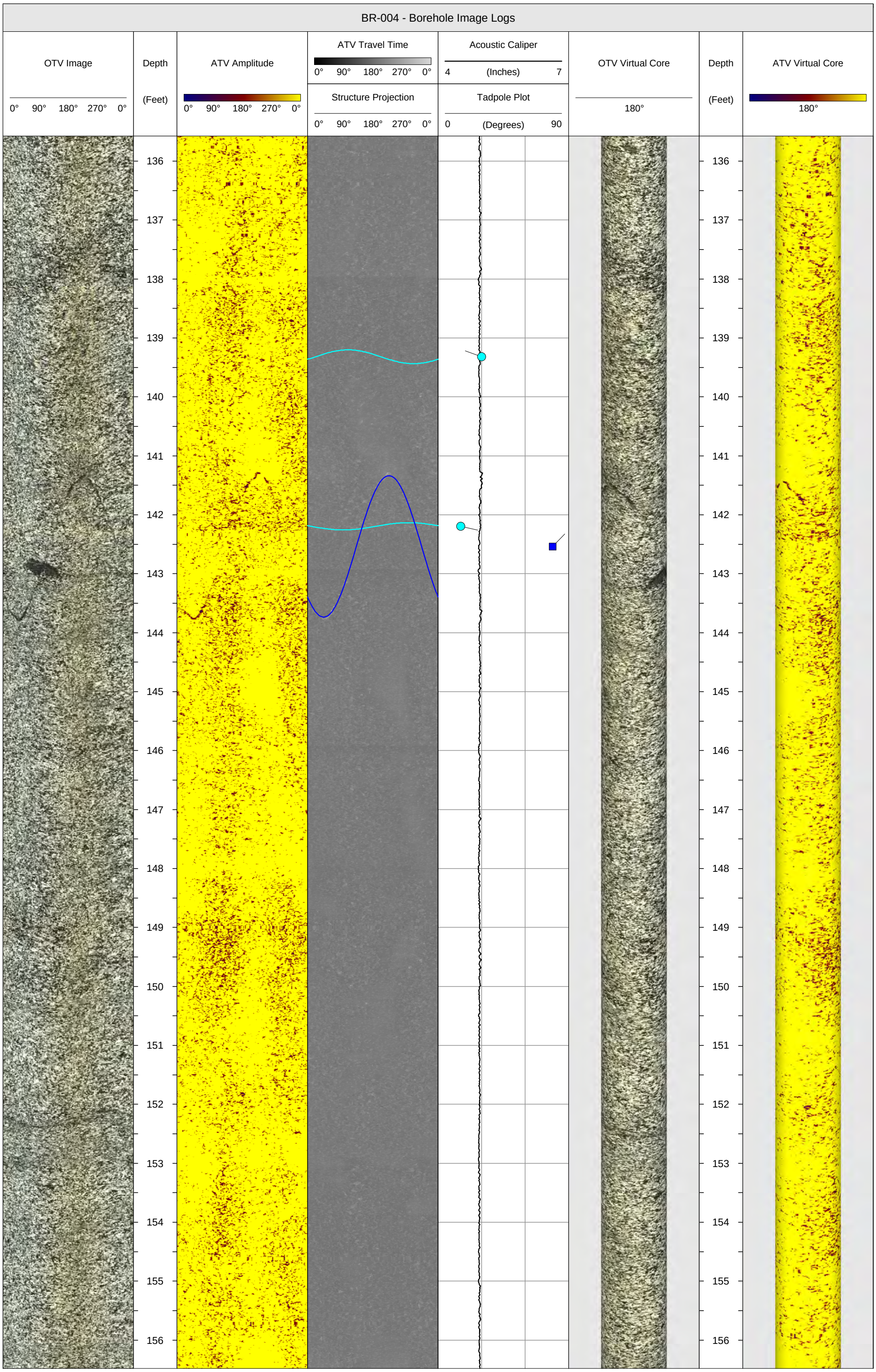
BR-004 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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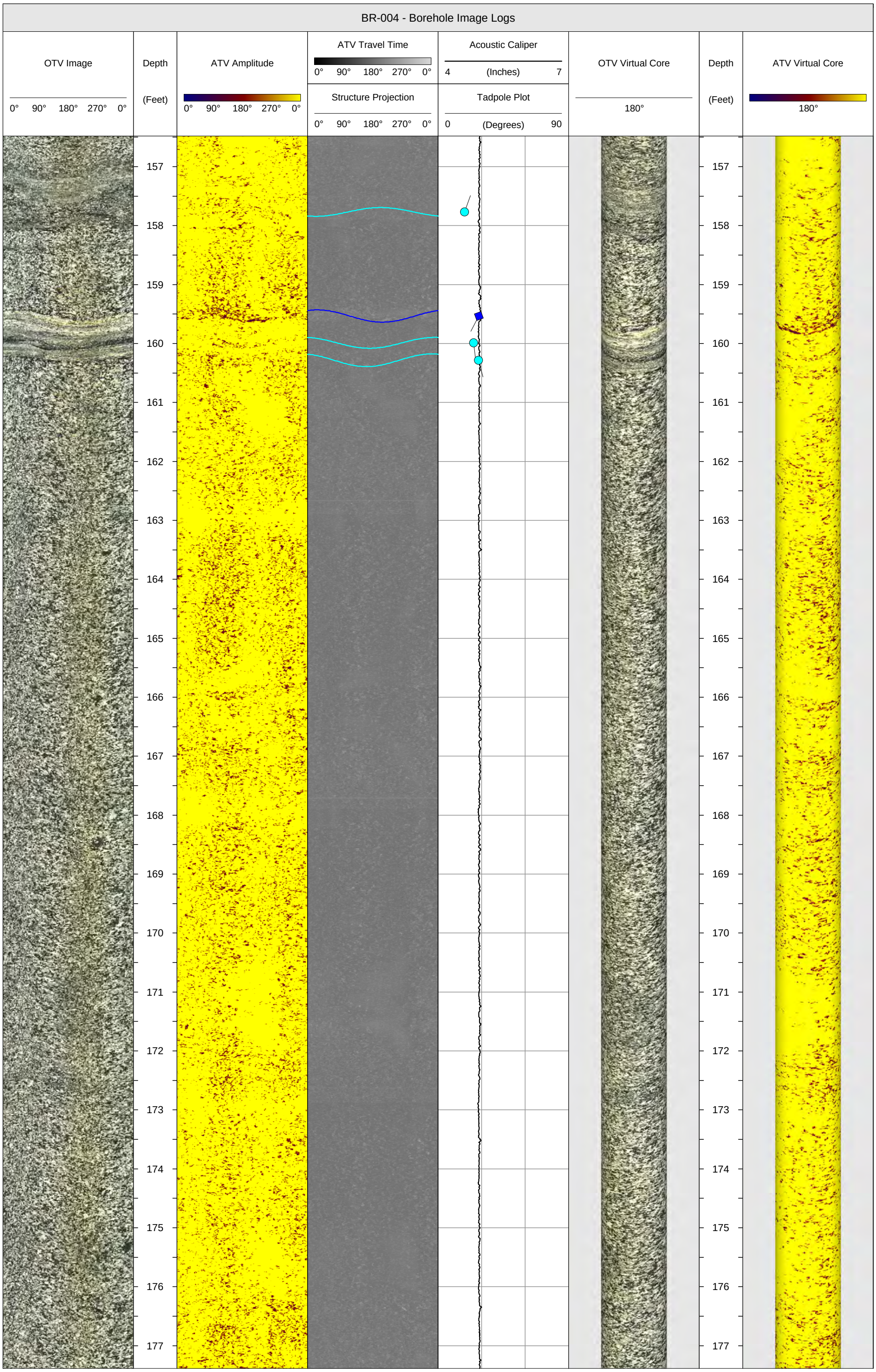
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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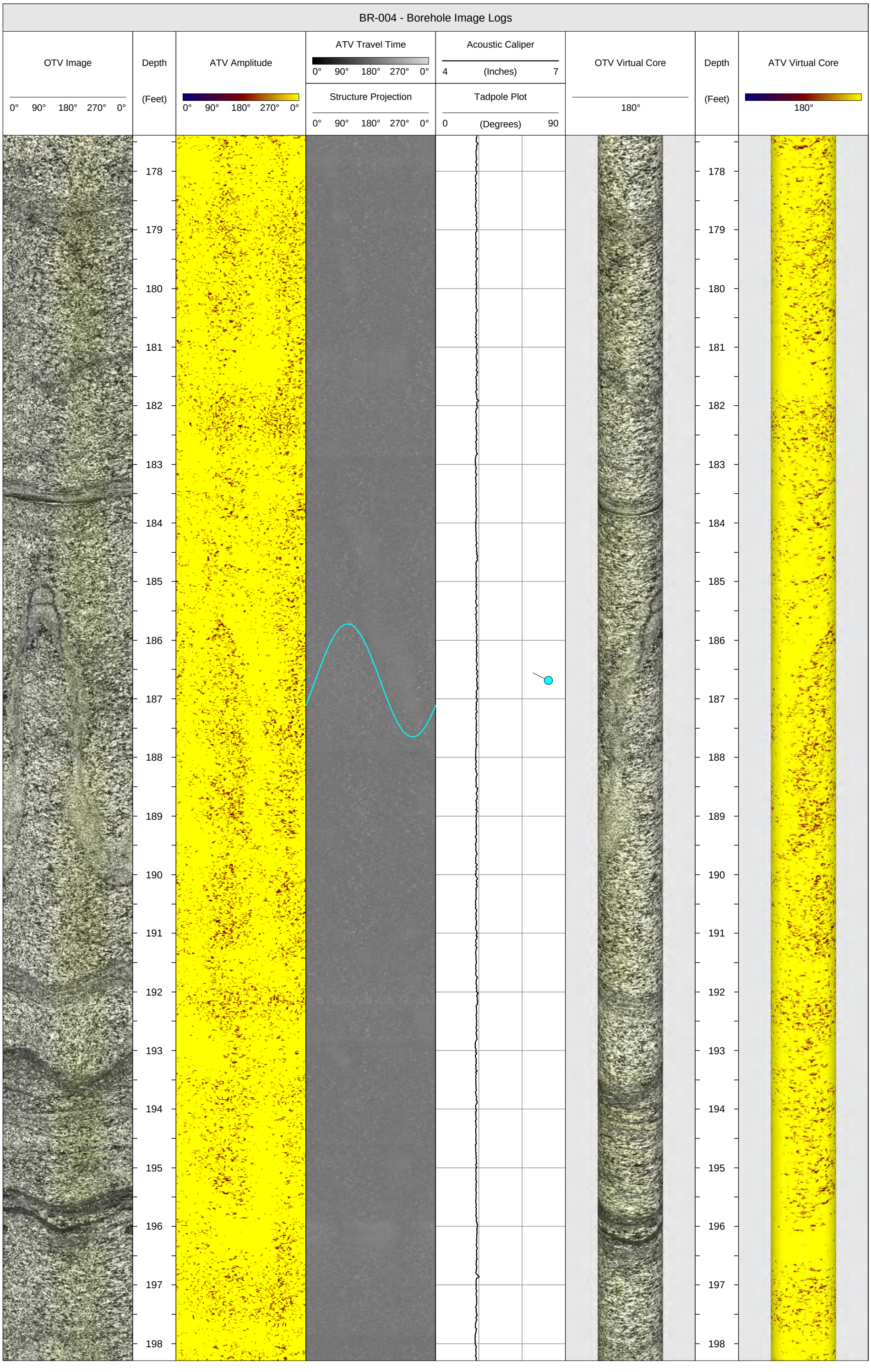
BR-004 - Borehole Image Logs
OTV Image
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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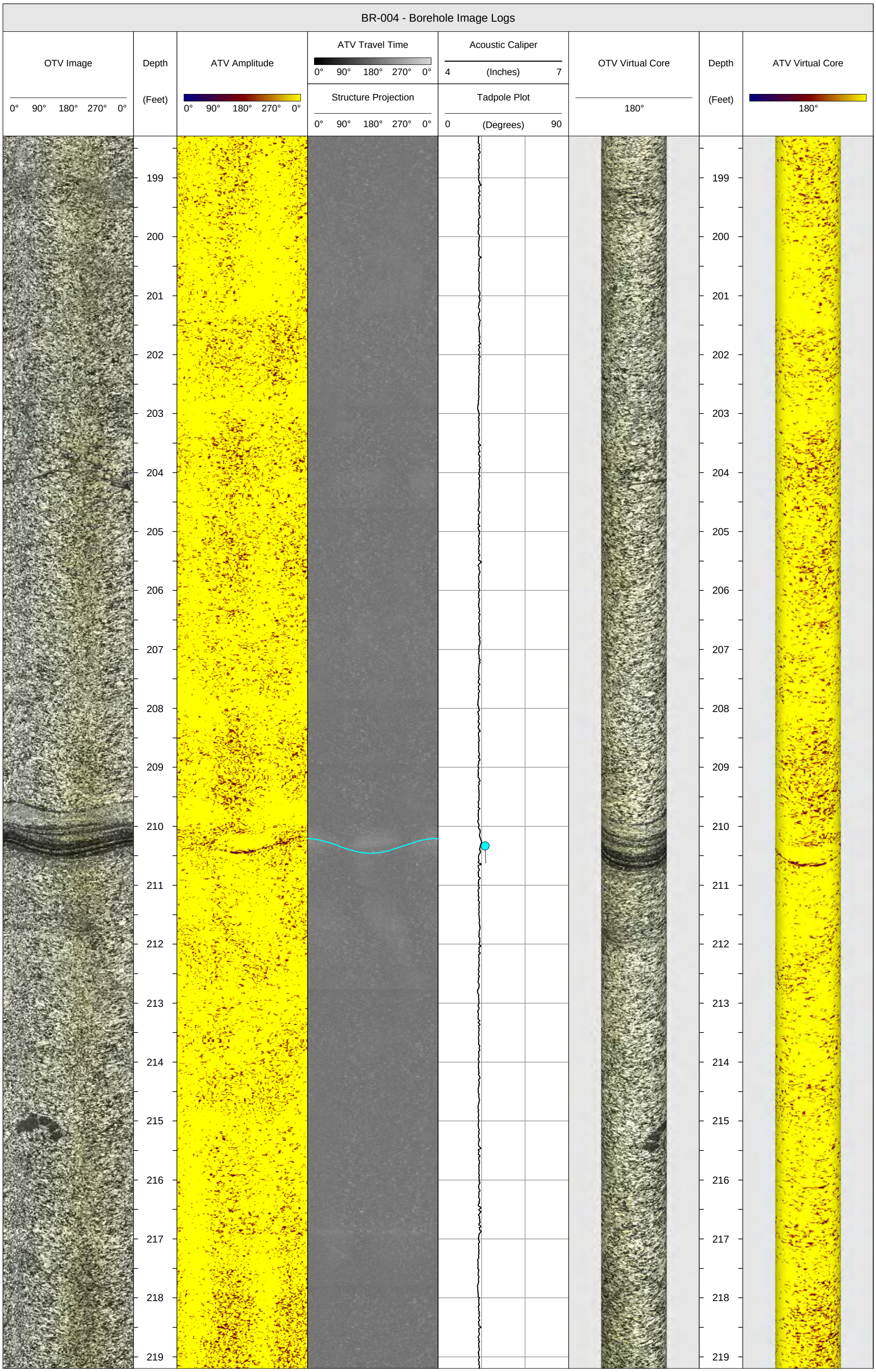
BR-004 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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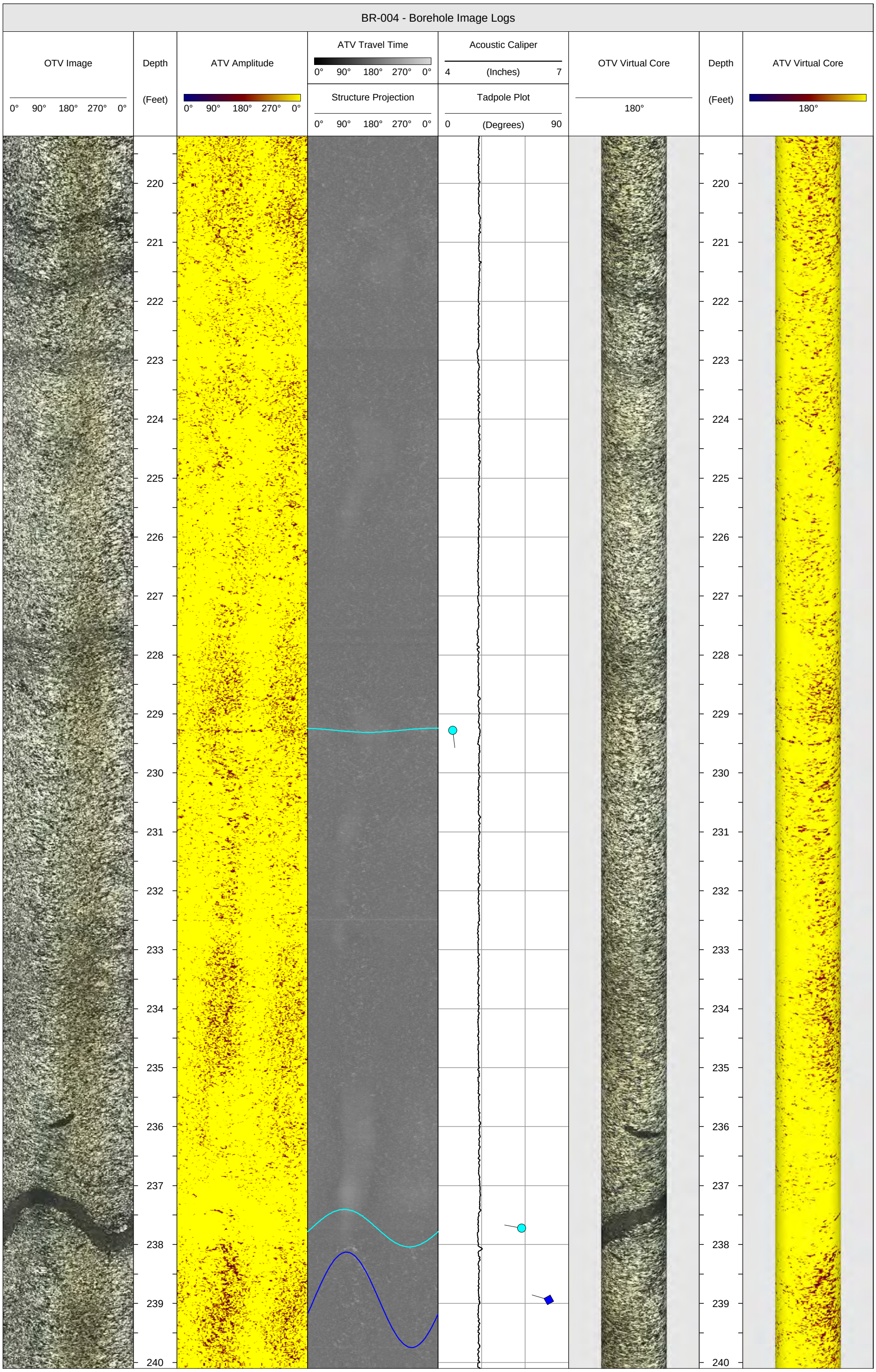
BR-004 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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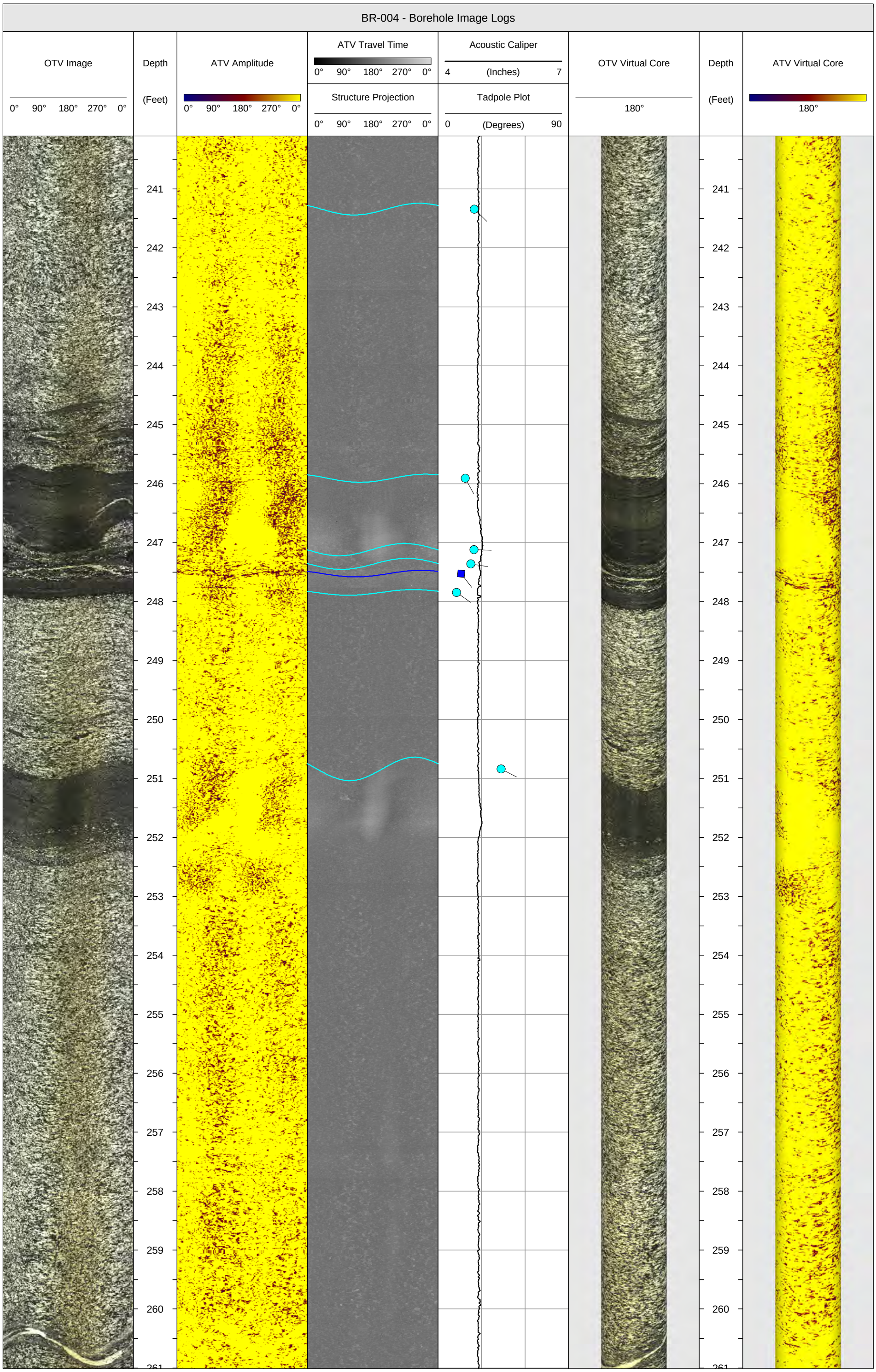
BR-004 - Borehole Image Logs
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Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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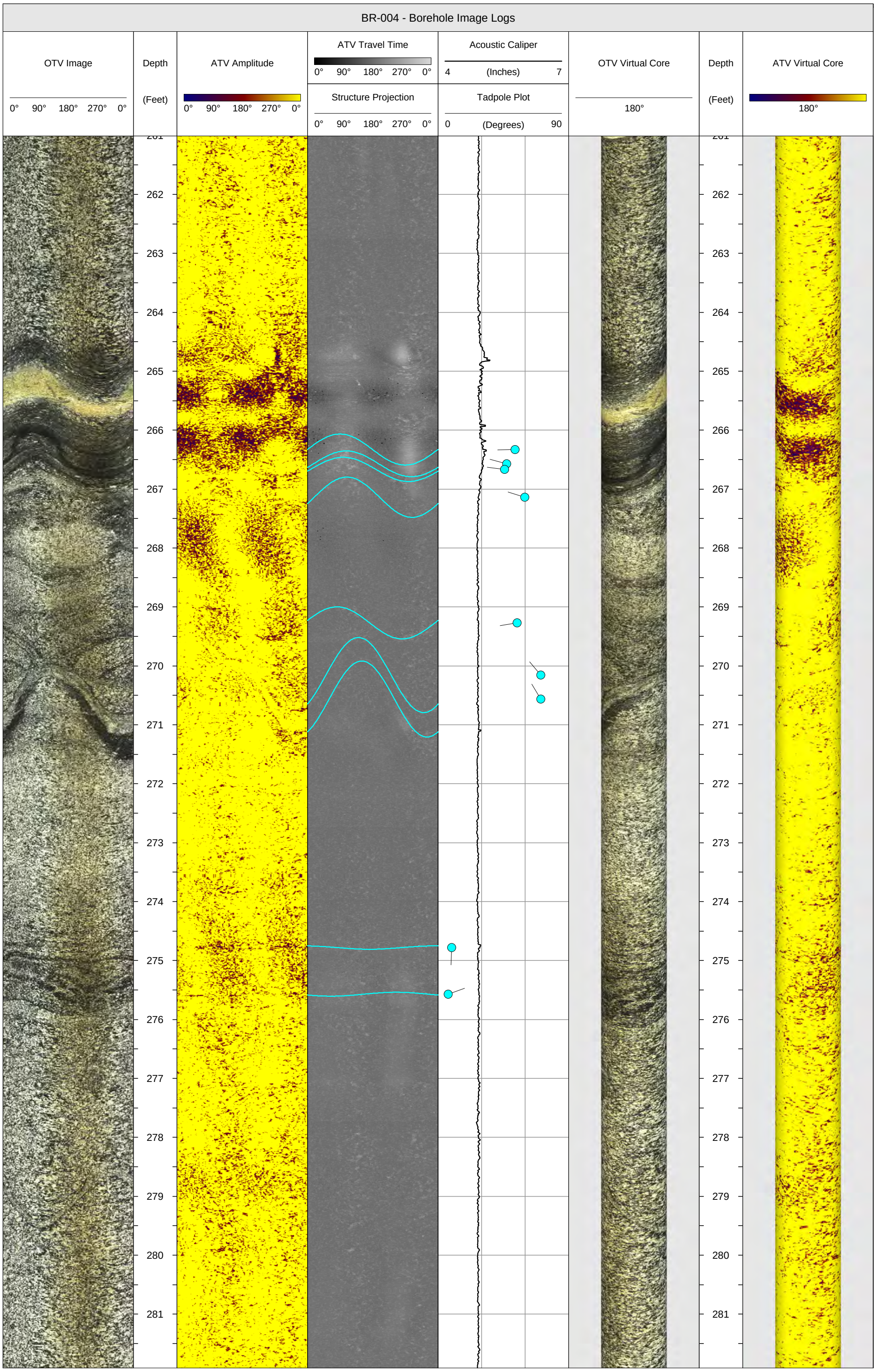
BR-004 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
261
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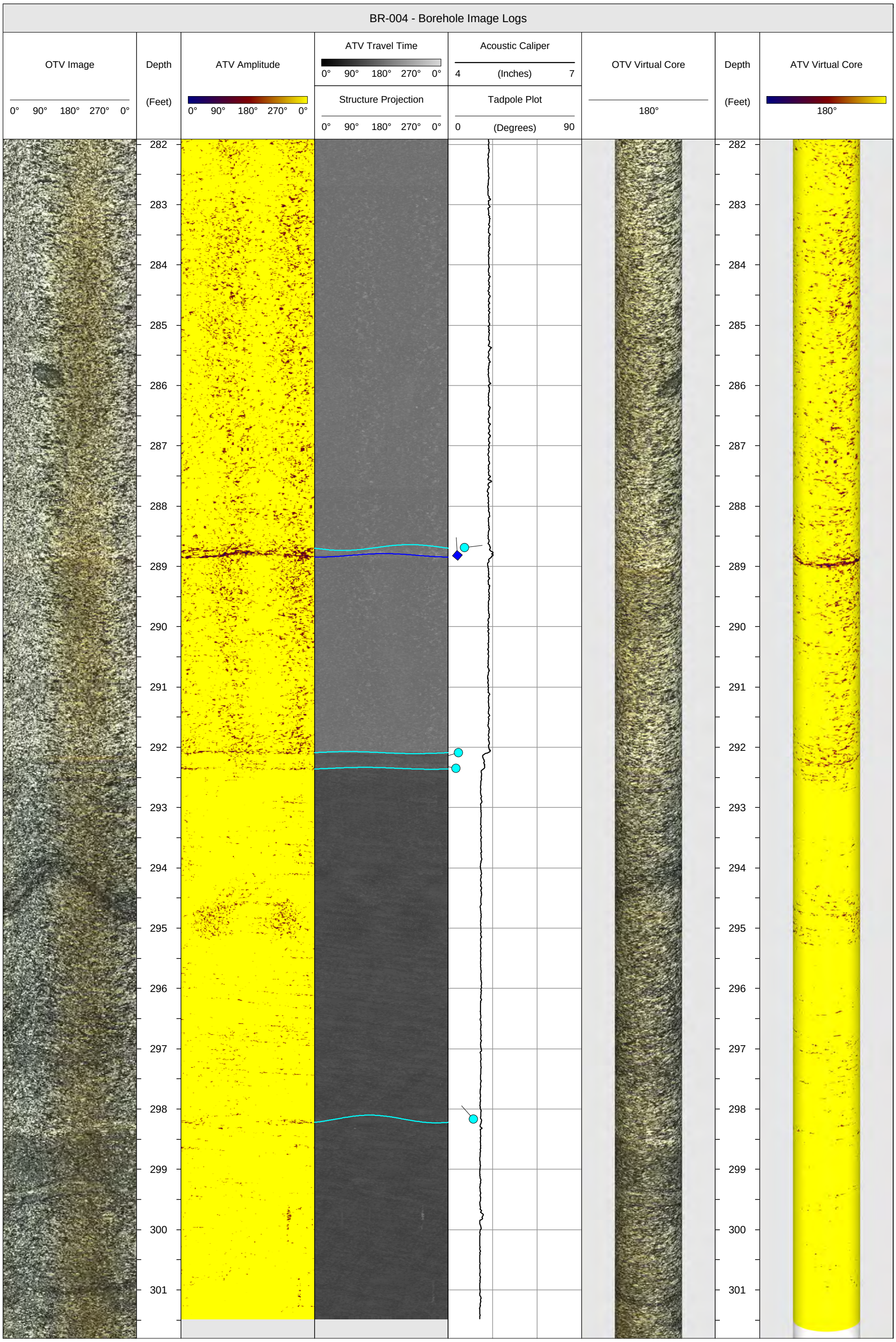
BR-004 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
282
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HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

BR-004 - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: July 6 & 7, 2020

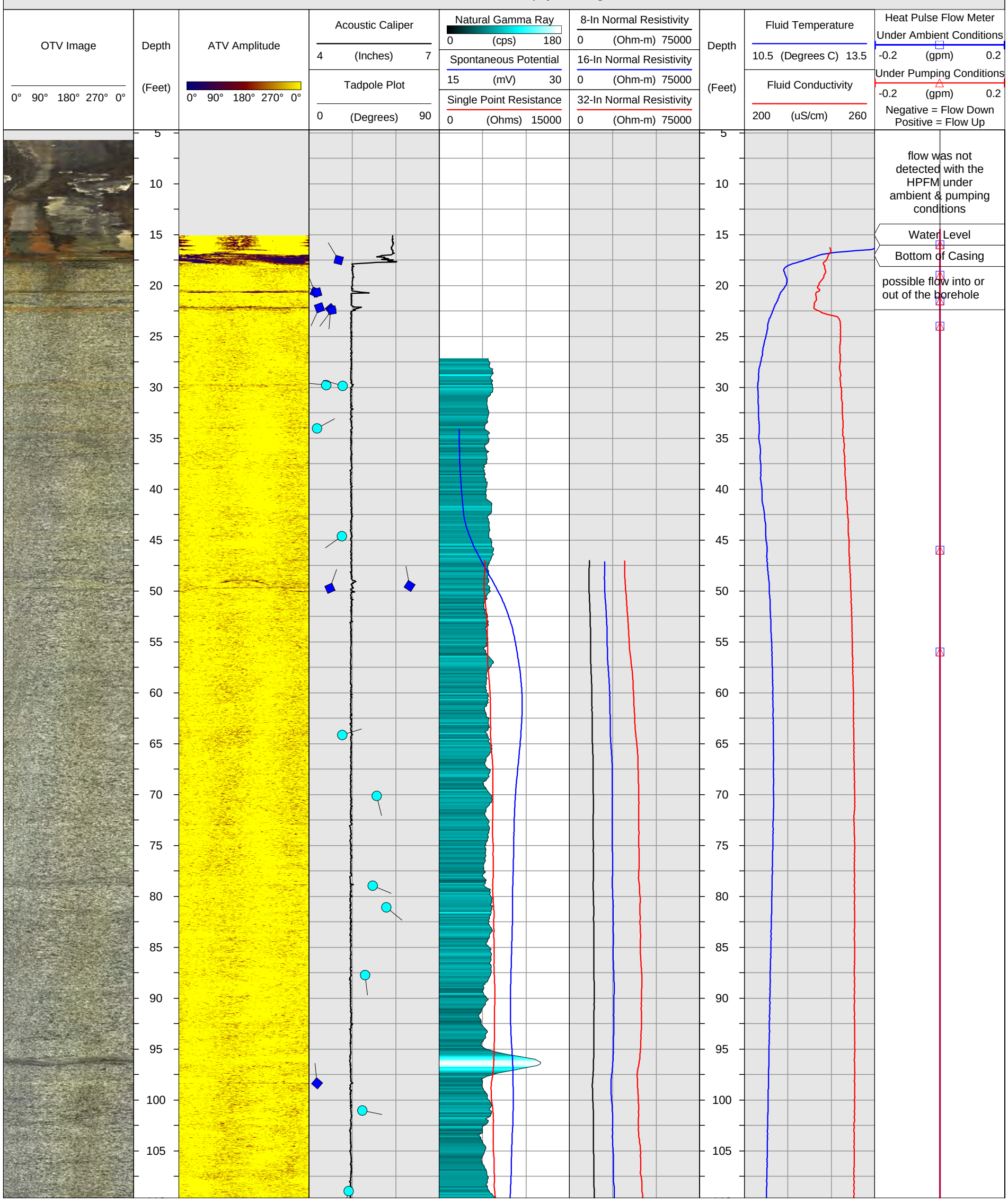
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	2.3 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	15.1 Feet

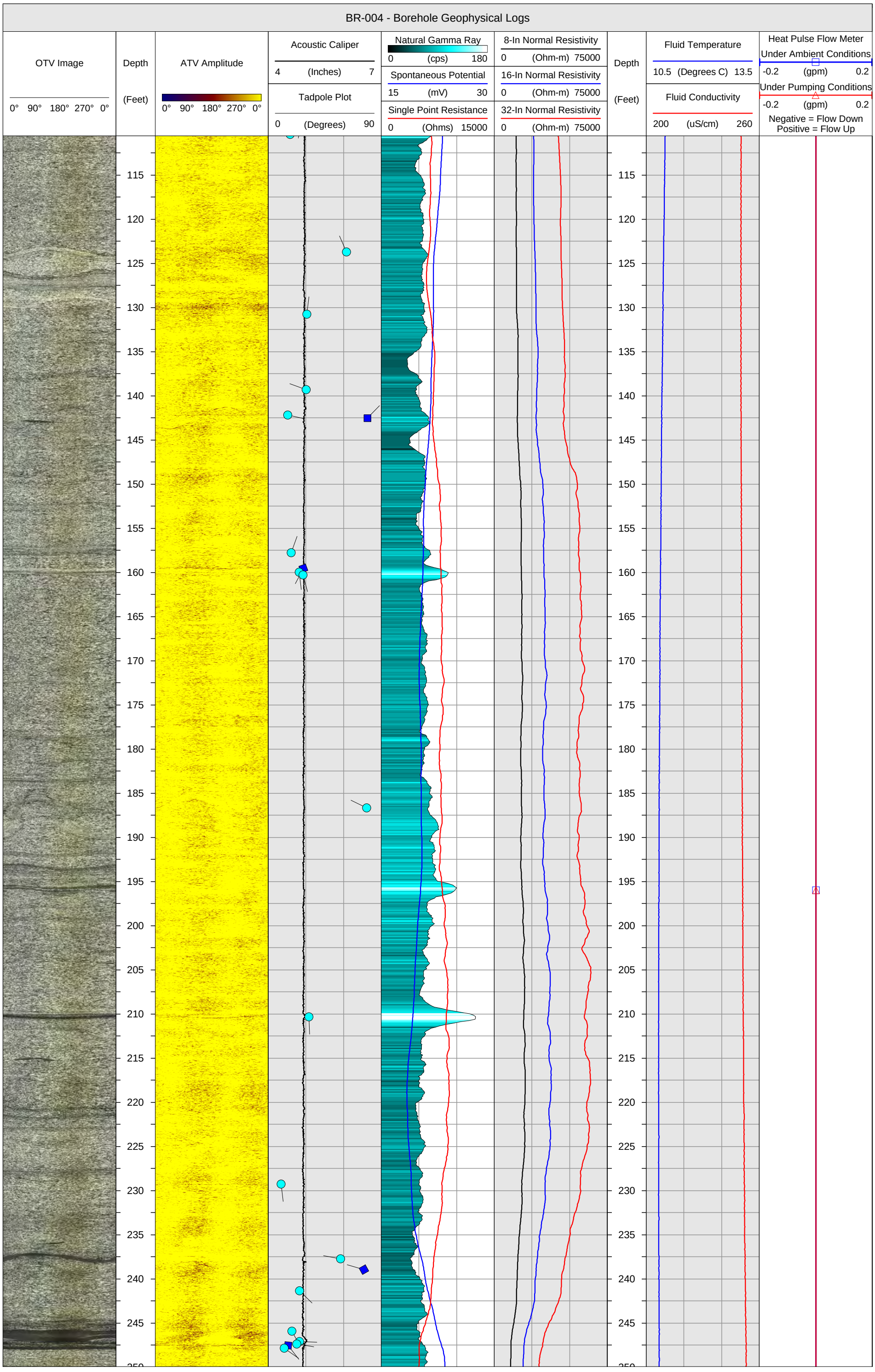
STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2

NOTES: Flow was not detected with the HPFM under ambient or pumping conditions. Possible flow reported in the logs below are based on the fluid temperature and fluid conductivity data under ambient and pumping conditions. Flow interpreted was either not active during HPFM testing or was too low to detect with the HPFM.

BR-004 - Borehole Geophysical Logs




BR-004 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 180
Spontaneous Potential
15 (mV) 30
Single Point Resistance
0 (Ohms) 15000
8-In Normal Resistivity
0 (Ohm-m) 75000
16-In Normal Resistivity
0 (Ohm-m) 75000
32-In Normal Resistivity
0 (Ohm-m) 75000
Depth
(Feet)
Fluid Temperature
10.5 (Degrees C) 13.5
Fluid Conductivity
200 (uS/cm) 260
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
115
120
125
130
135
140
145
150
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235
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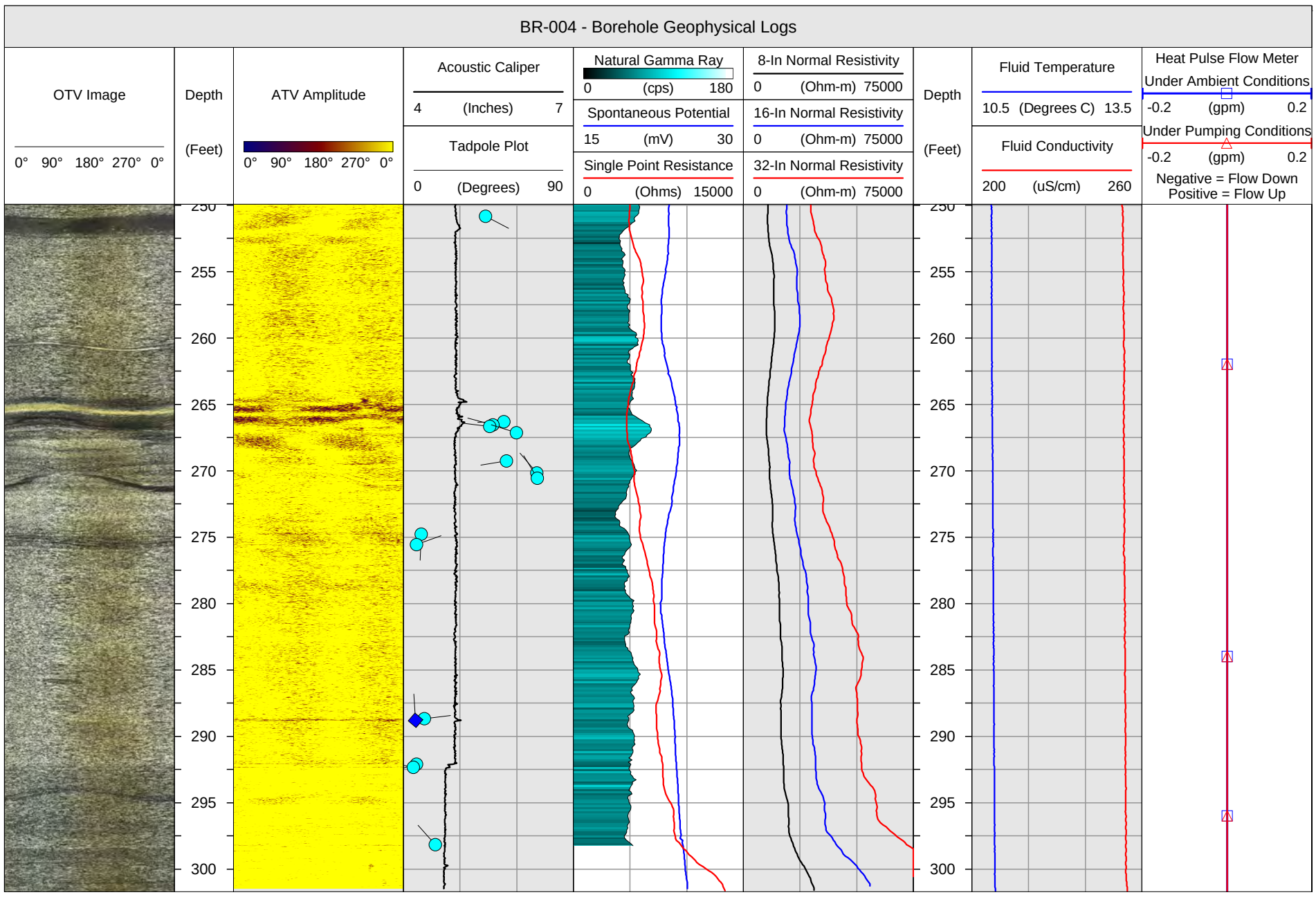
BR-004 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 180
Spontaneous Potential
15 (mV) 30
Single Point Resistance
0 (Ohms) 15000
8-In Normal Resistivity
0 (Ohm-m) 75000
16-In Normal Resistivity
0 (Ohm-m) 75000
32-In Normal Resistivity
0 (Ohm-m) 75000
Depth
(Feet)
Fluid Temperature
10.5 (Degrees C) 13.5
Fluid Conductivity
200 (uS/cm) 260
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
250
255
260
265
270
275
280
285
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300

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Tel: 732.661.0555

BR-005 - BOREHOLE IMAGE LOGS

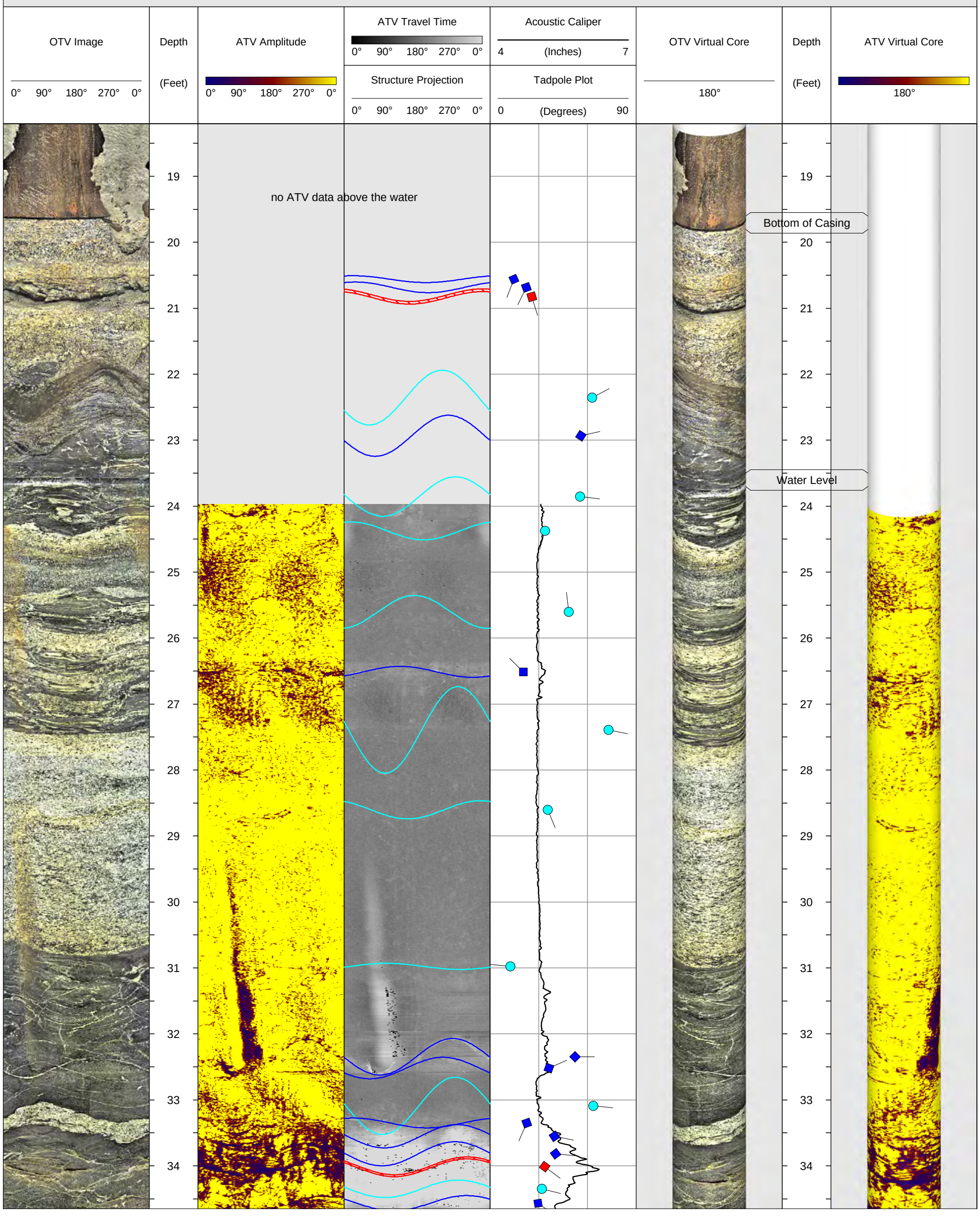
DATE(S) LOGGED: July 7 & 8, 2020

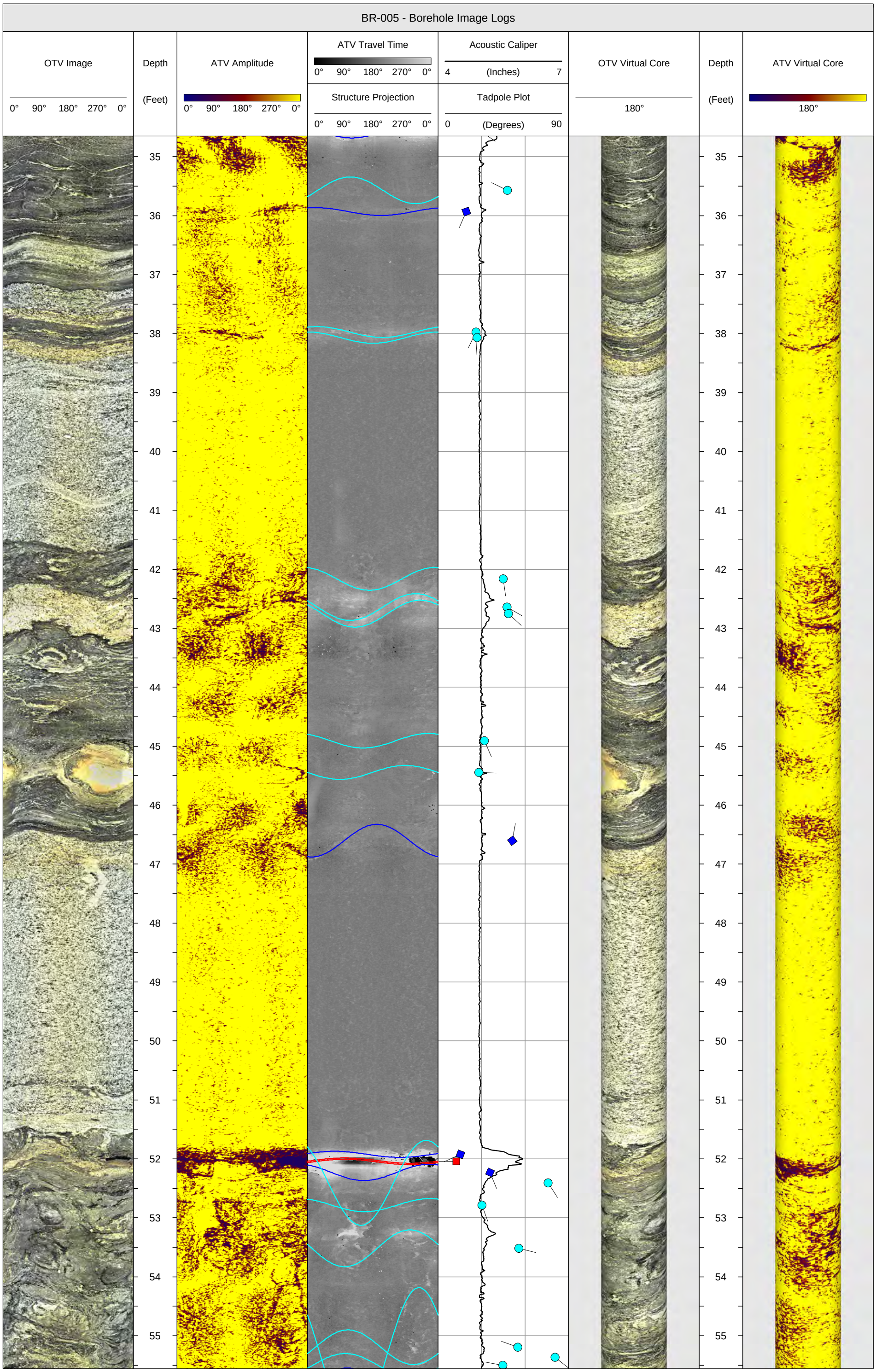
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.1 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	24.3 Feet

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-005 - Borehole Image Logs




BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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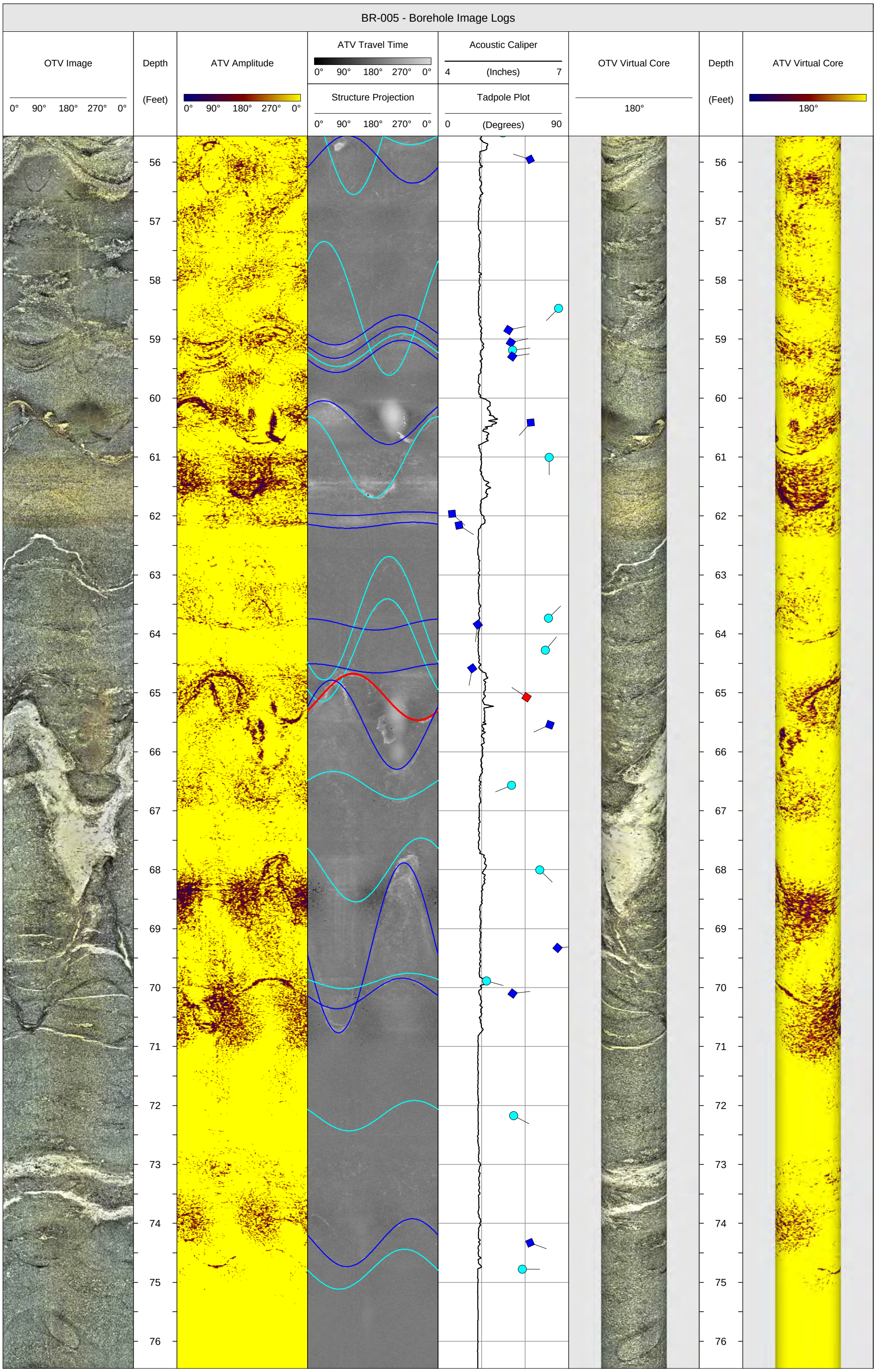
BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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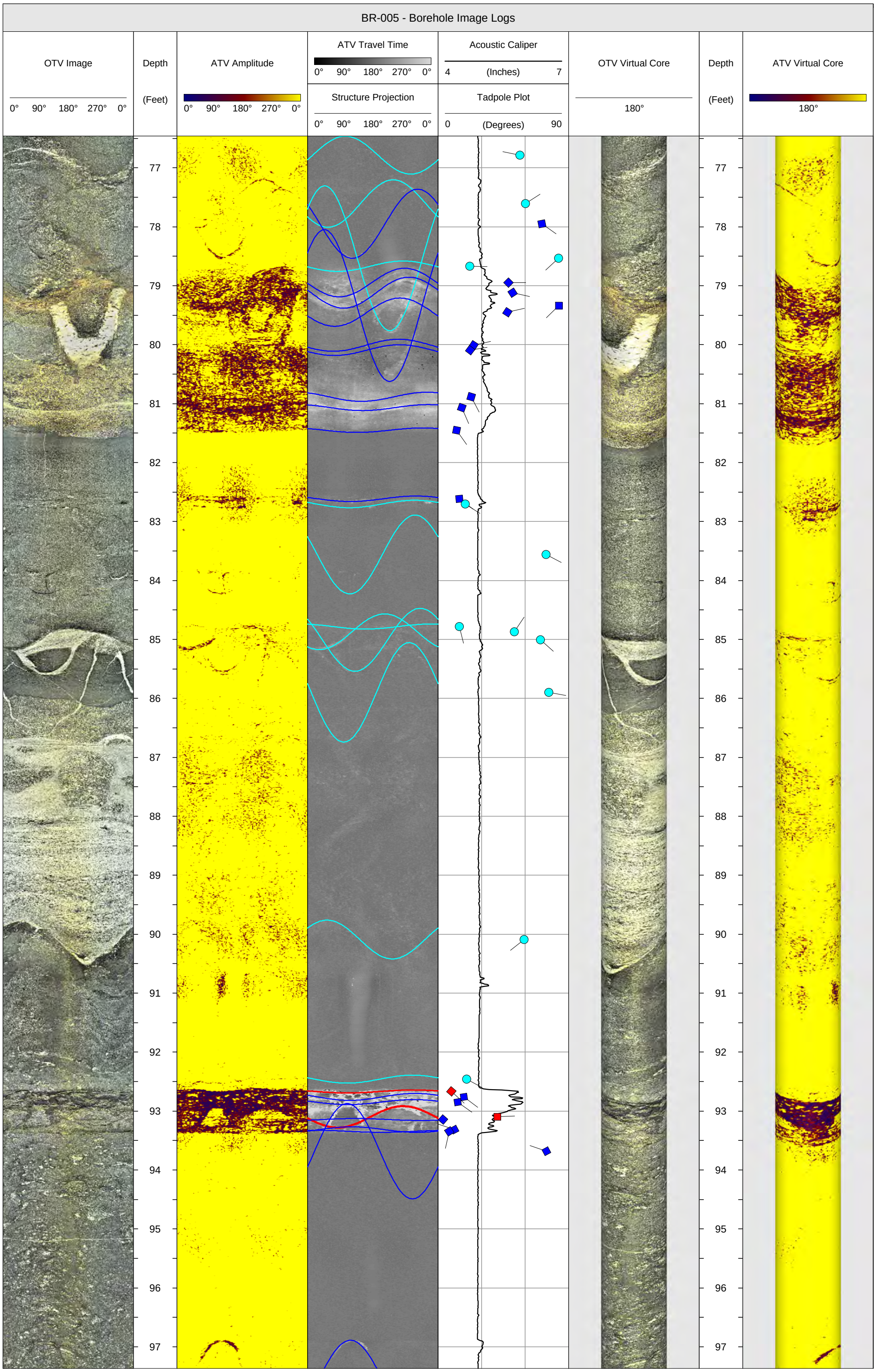
BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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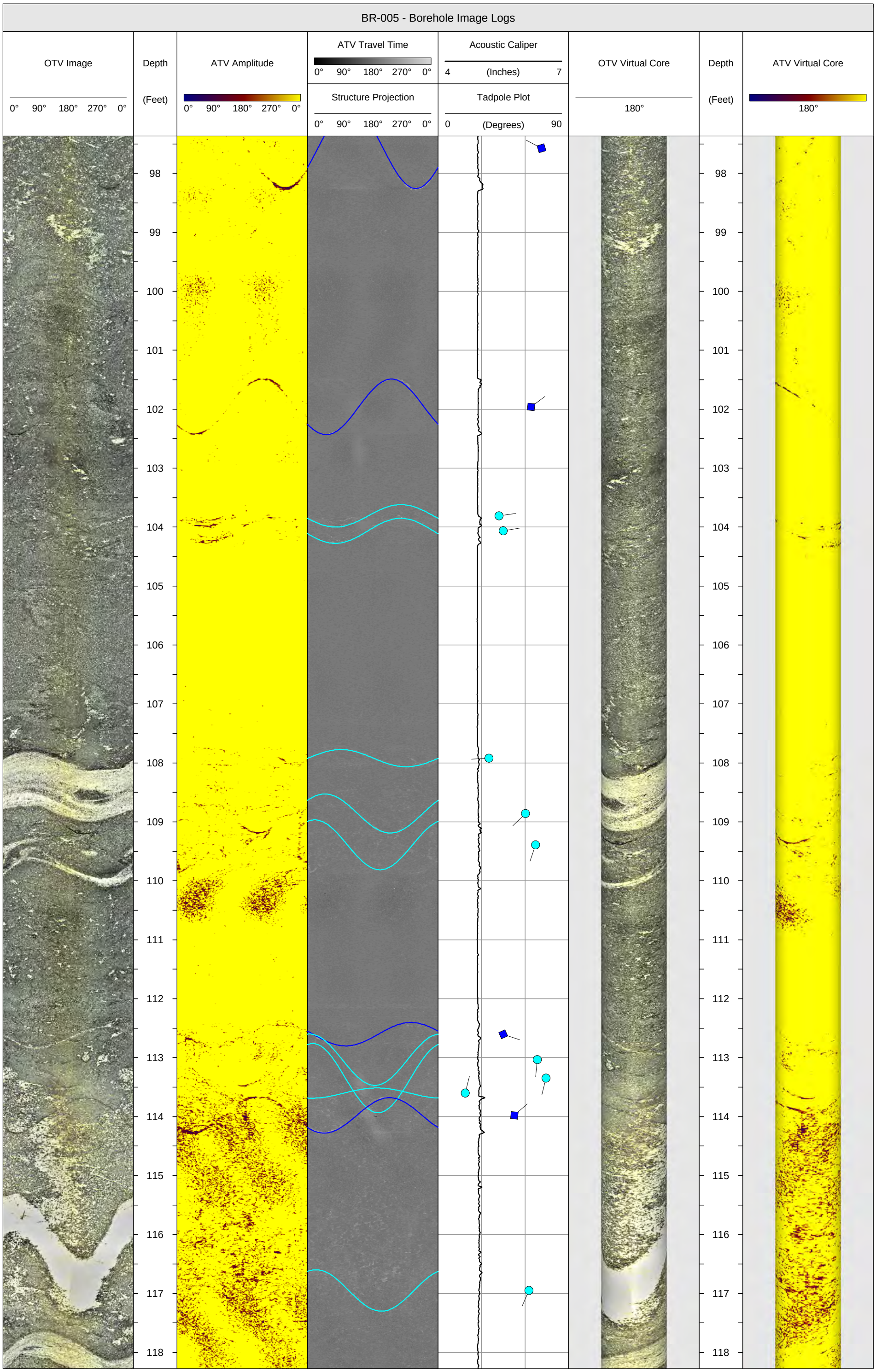
BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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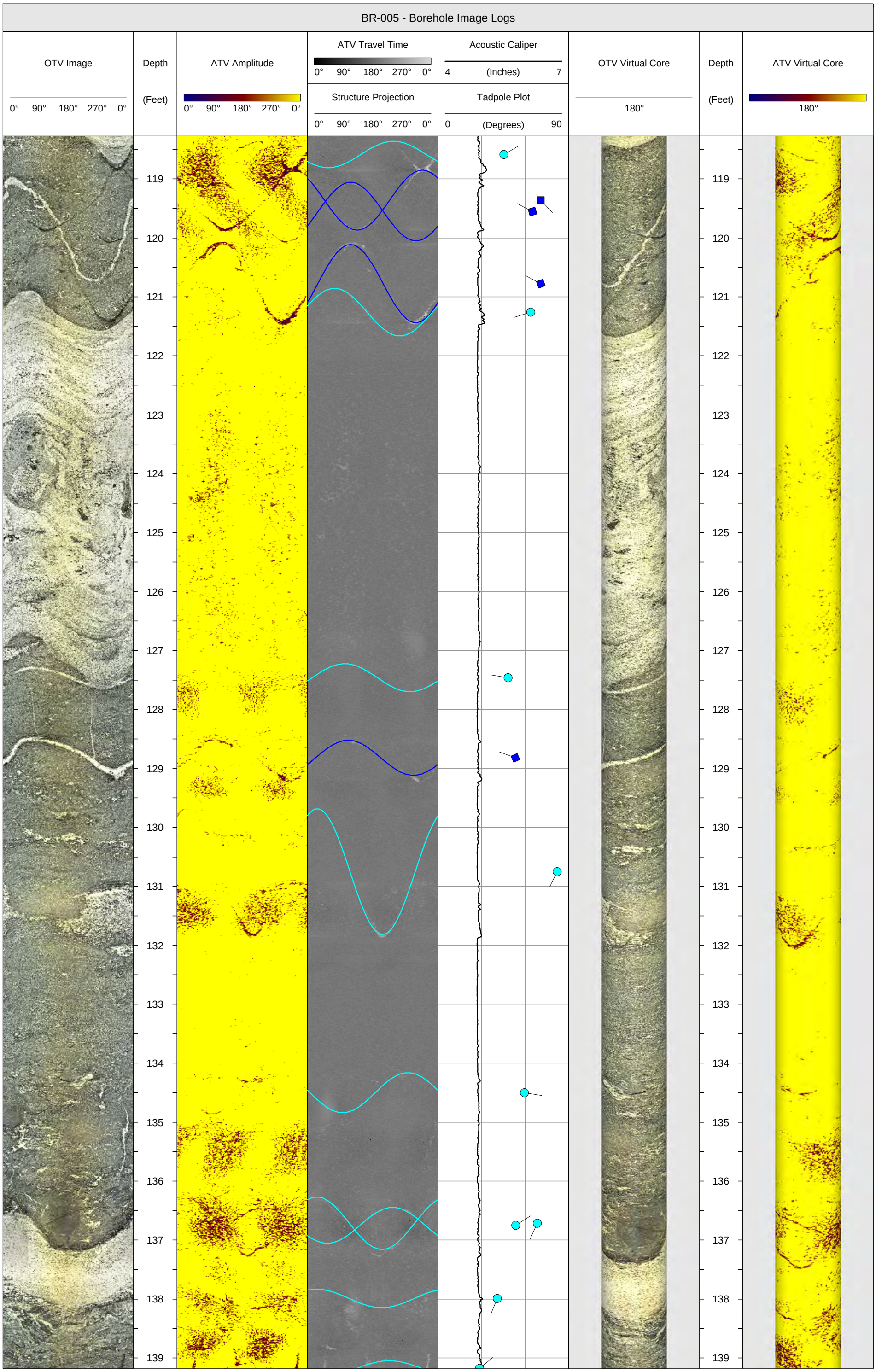
BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
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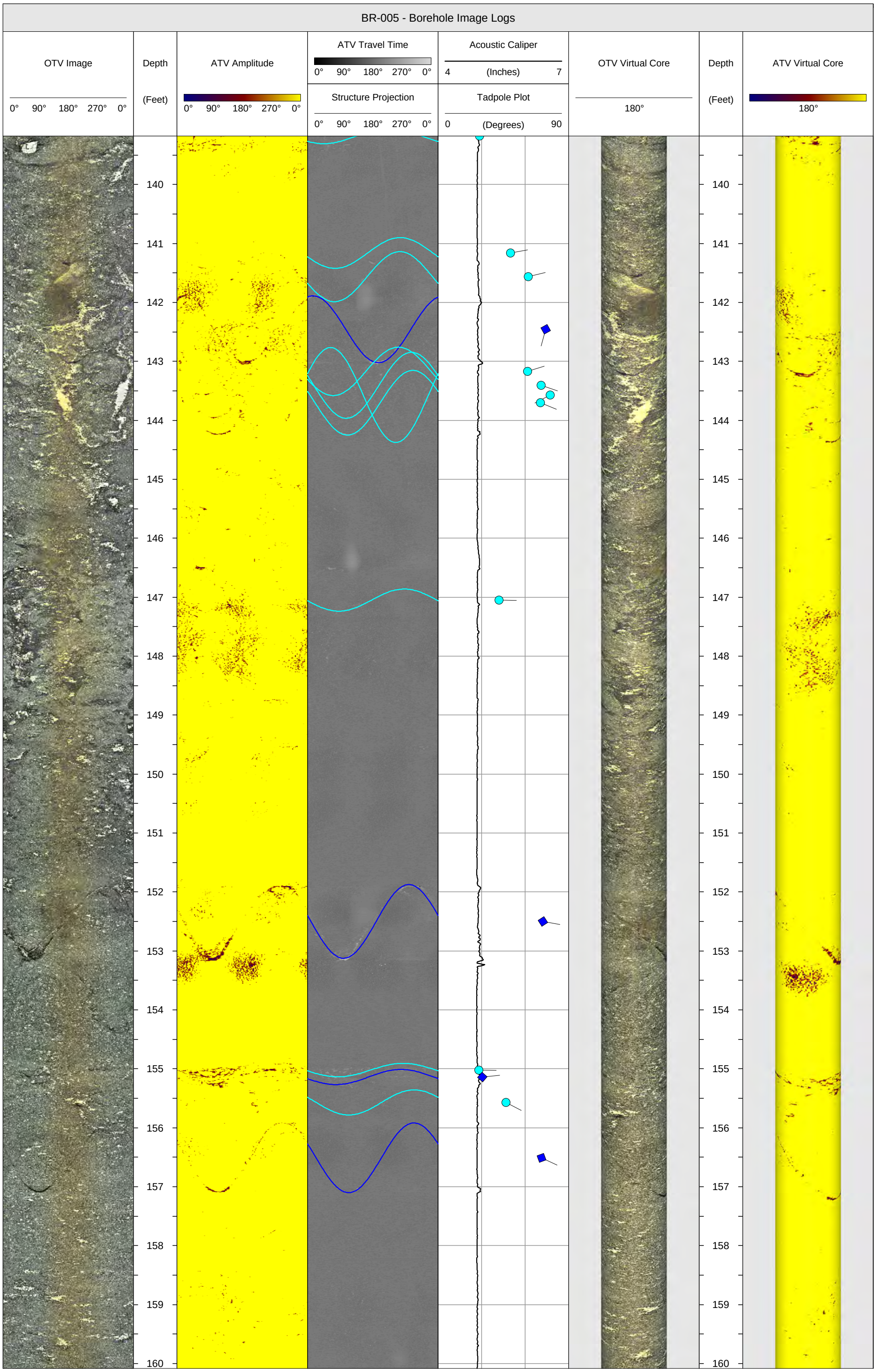
BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
140
141
142
143
144
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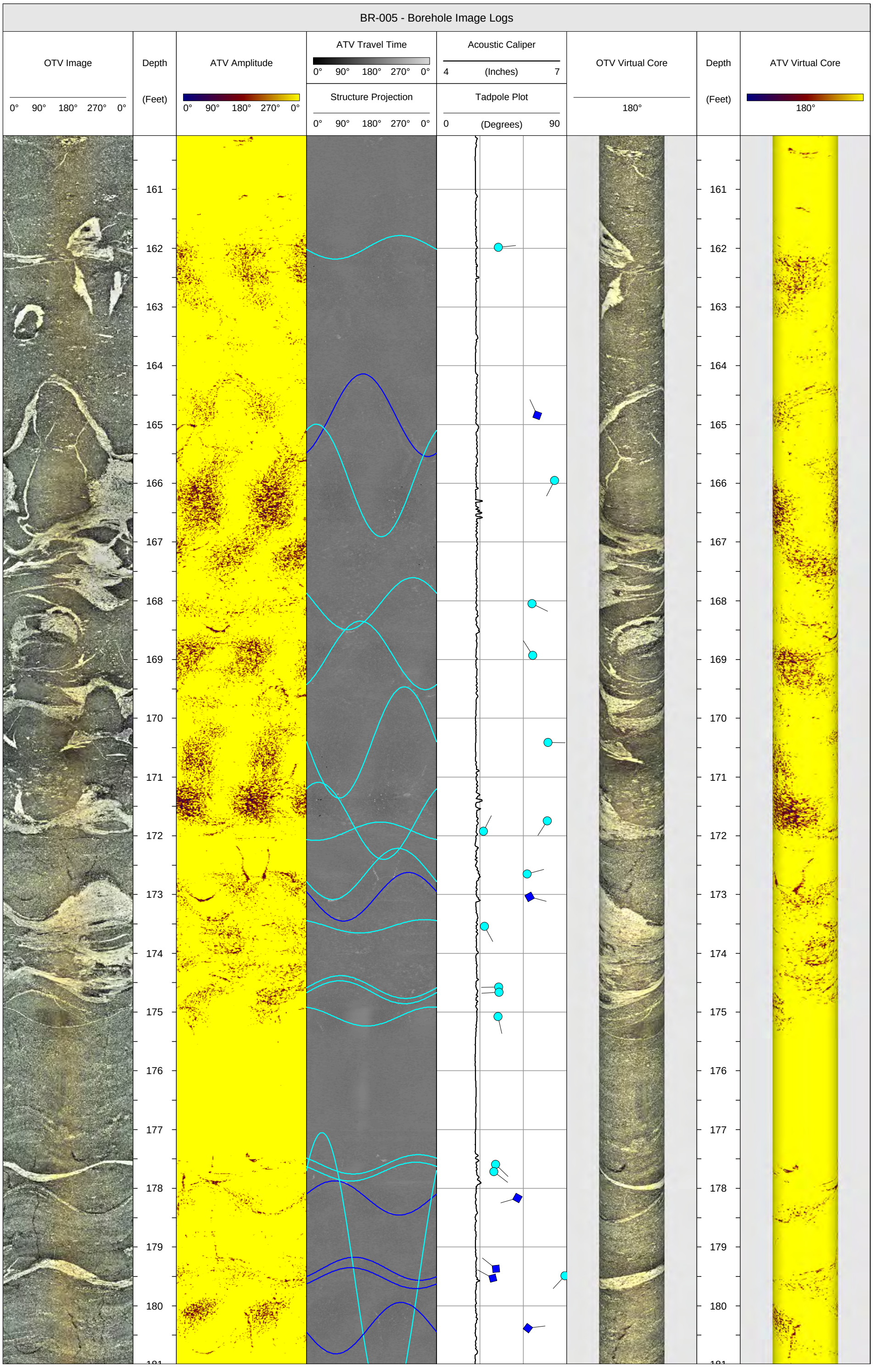
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OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
161
162
163
164
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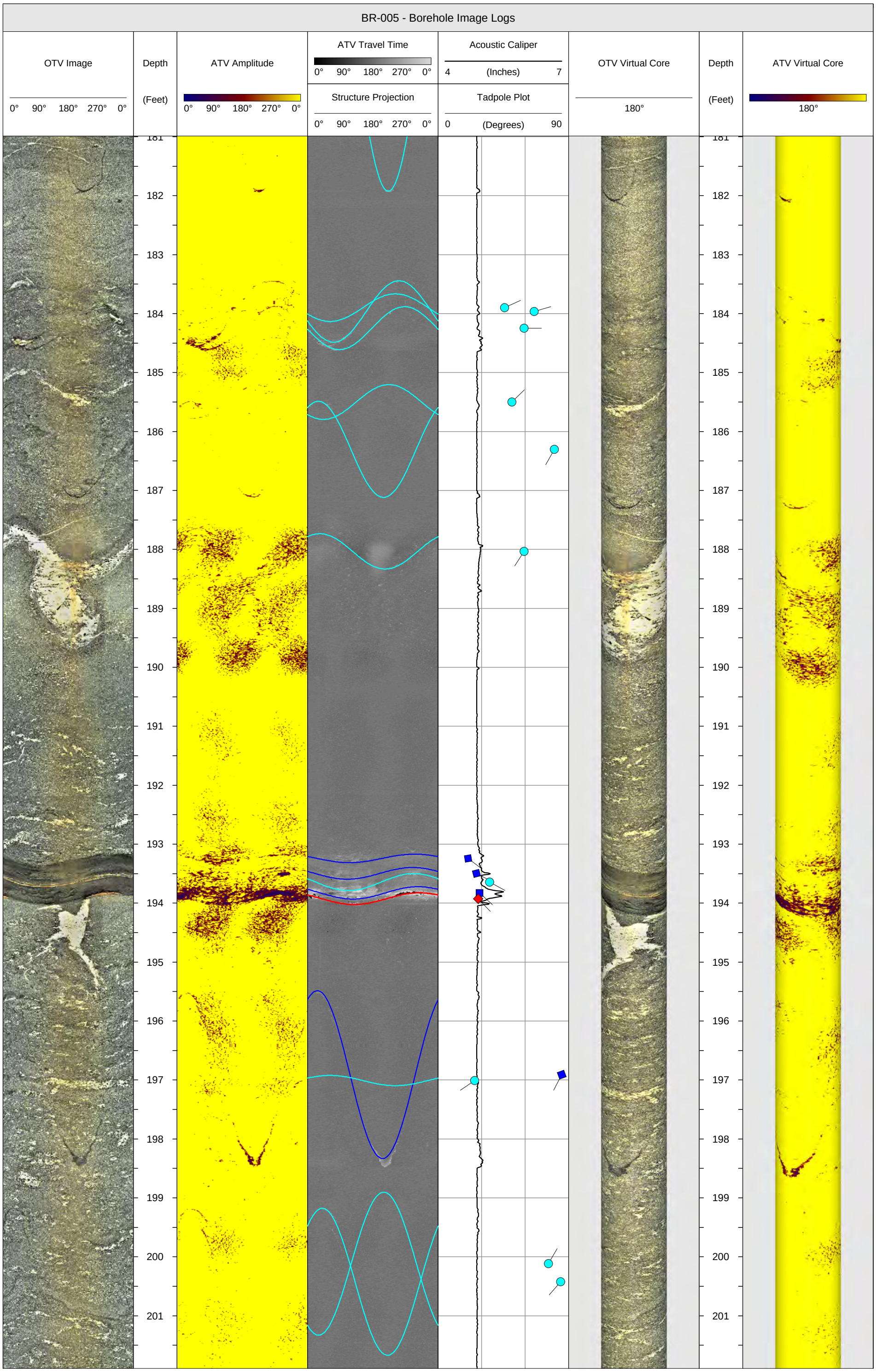
179
180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OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
181
182
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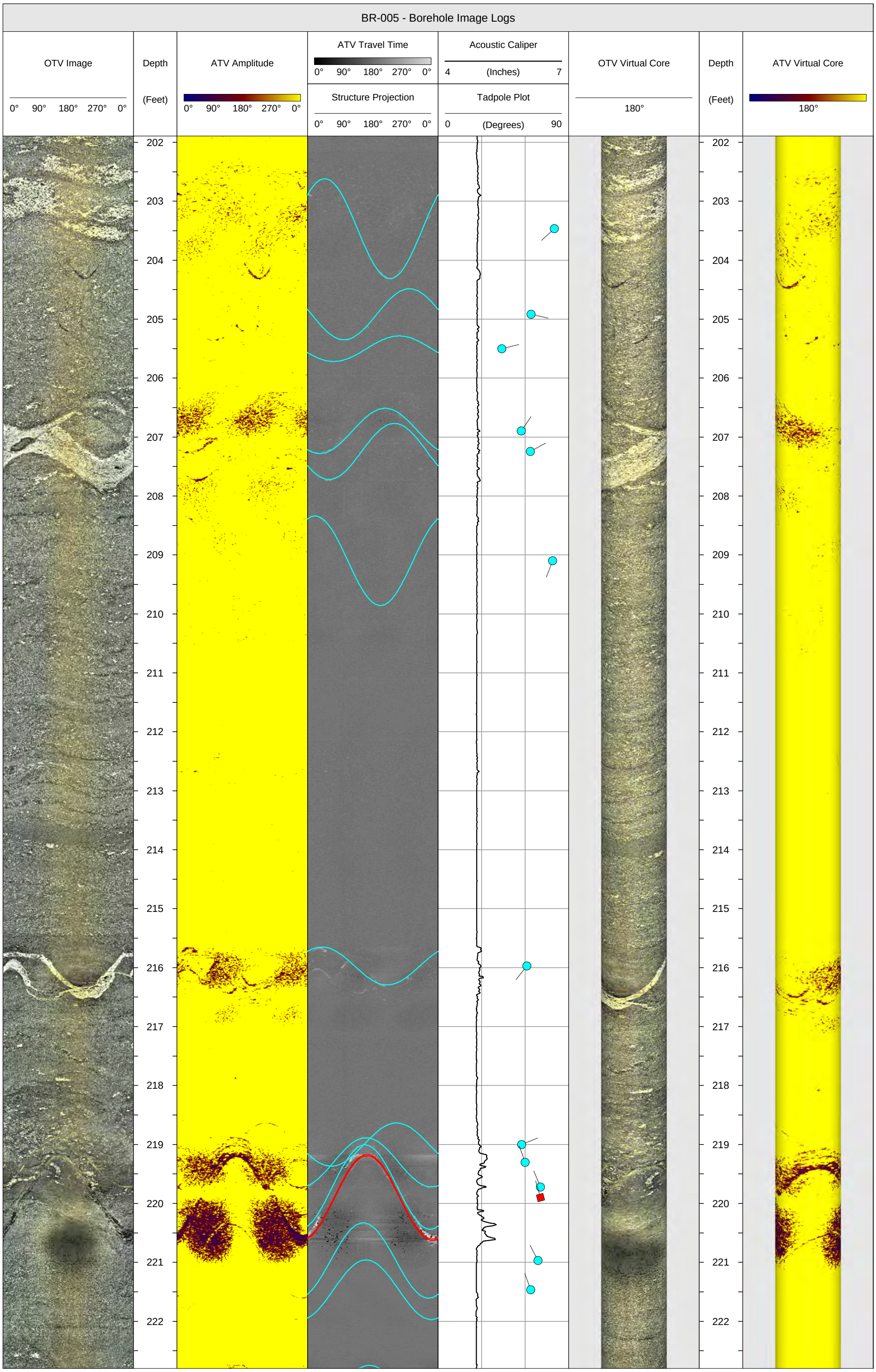
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OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
202
203
204
205
206
207
208
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212
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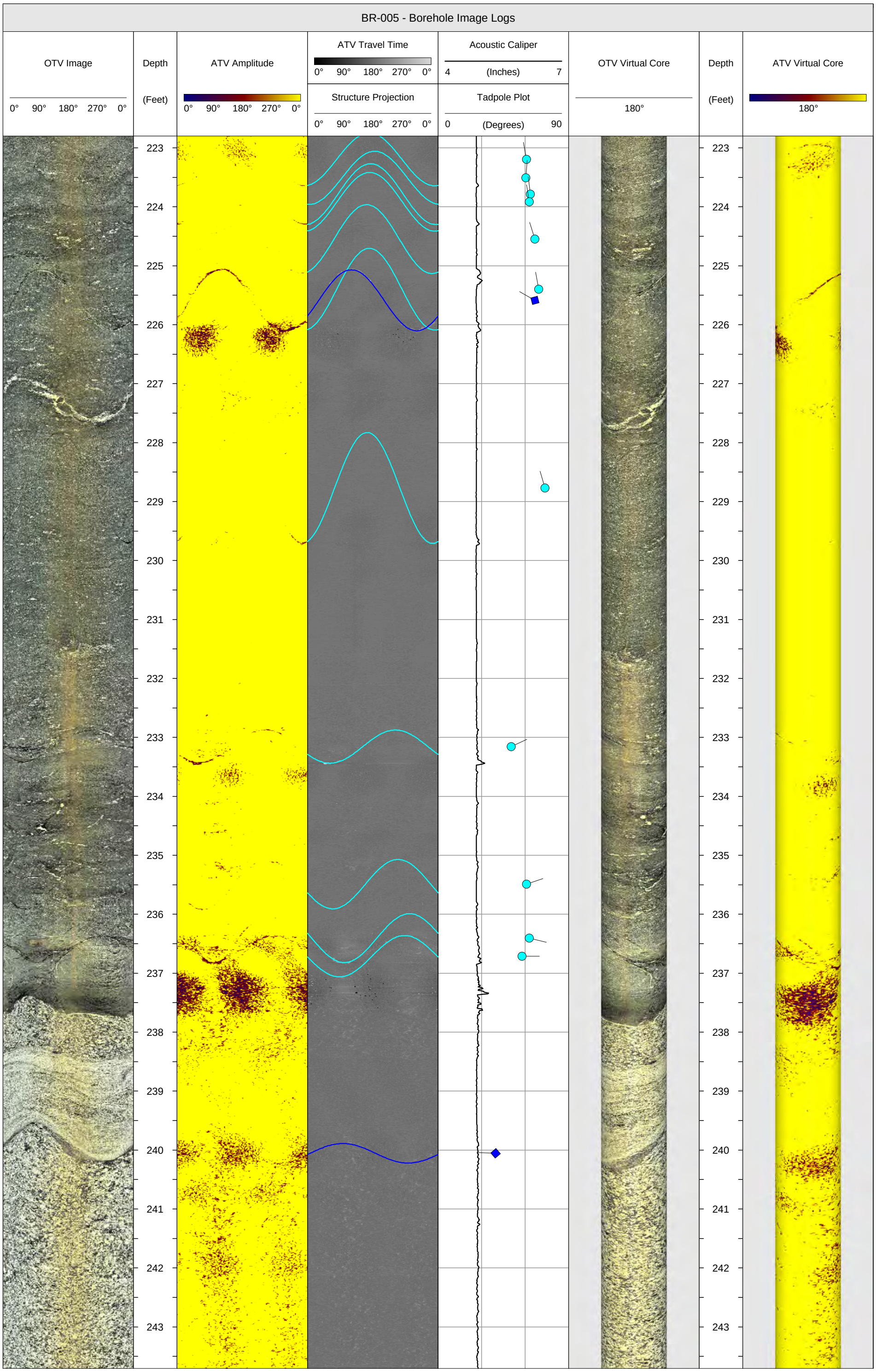
221
222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OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
223
224
225
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227
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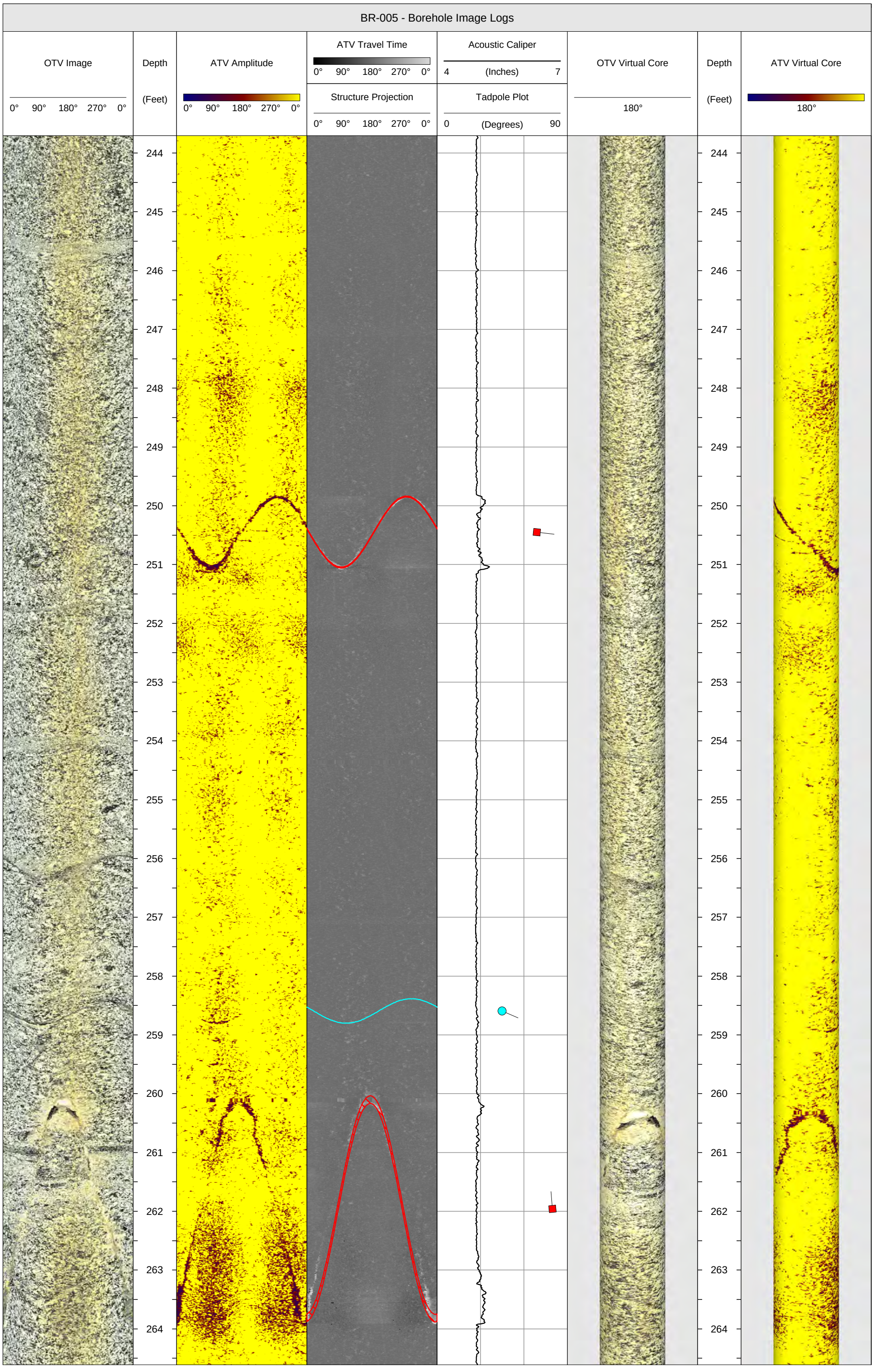
243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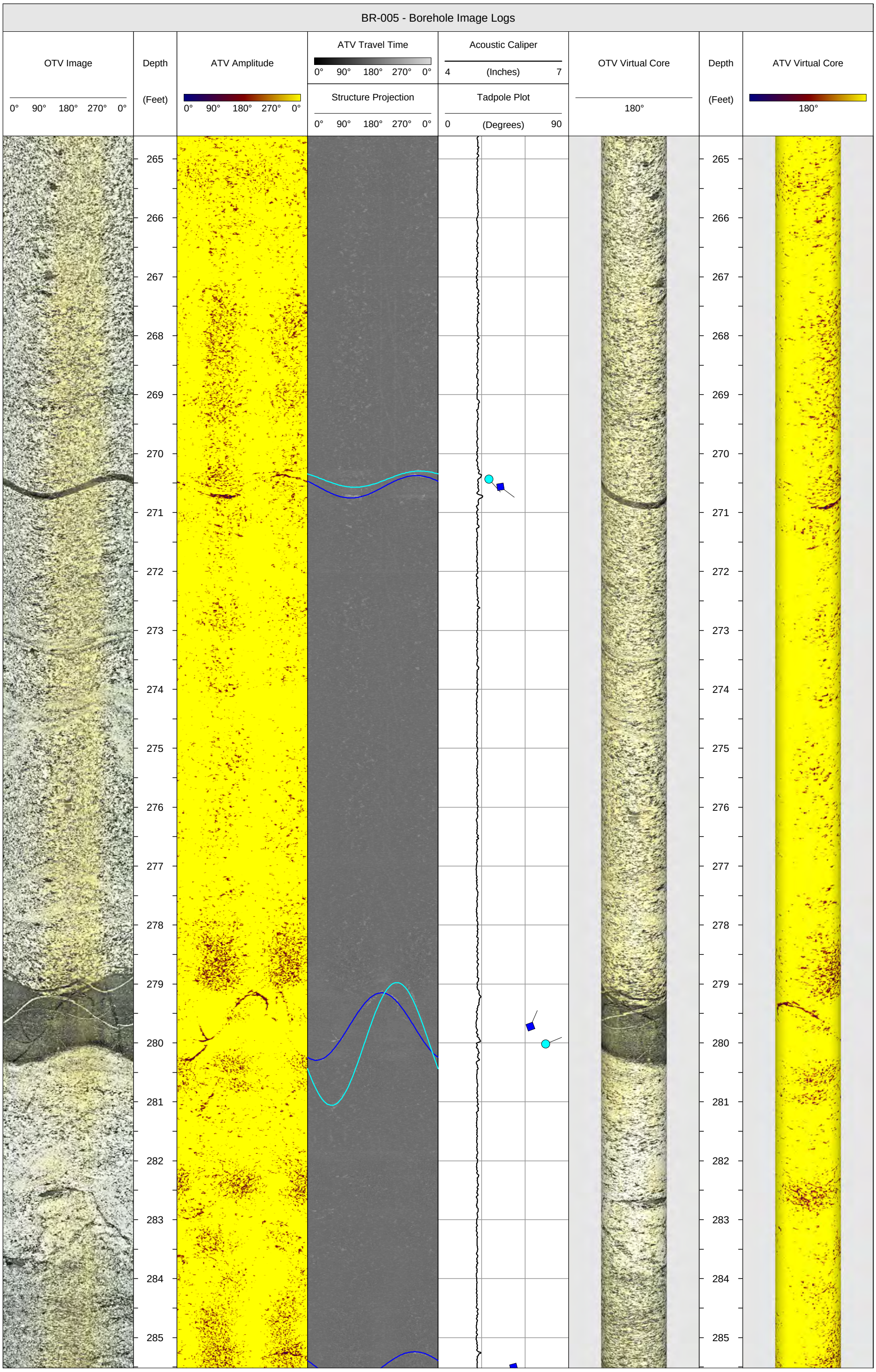
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264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OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
265
266
267
268
269
270
271
272
273
274
275
276
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279
280
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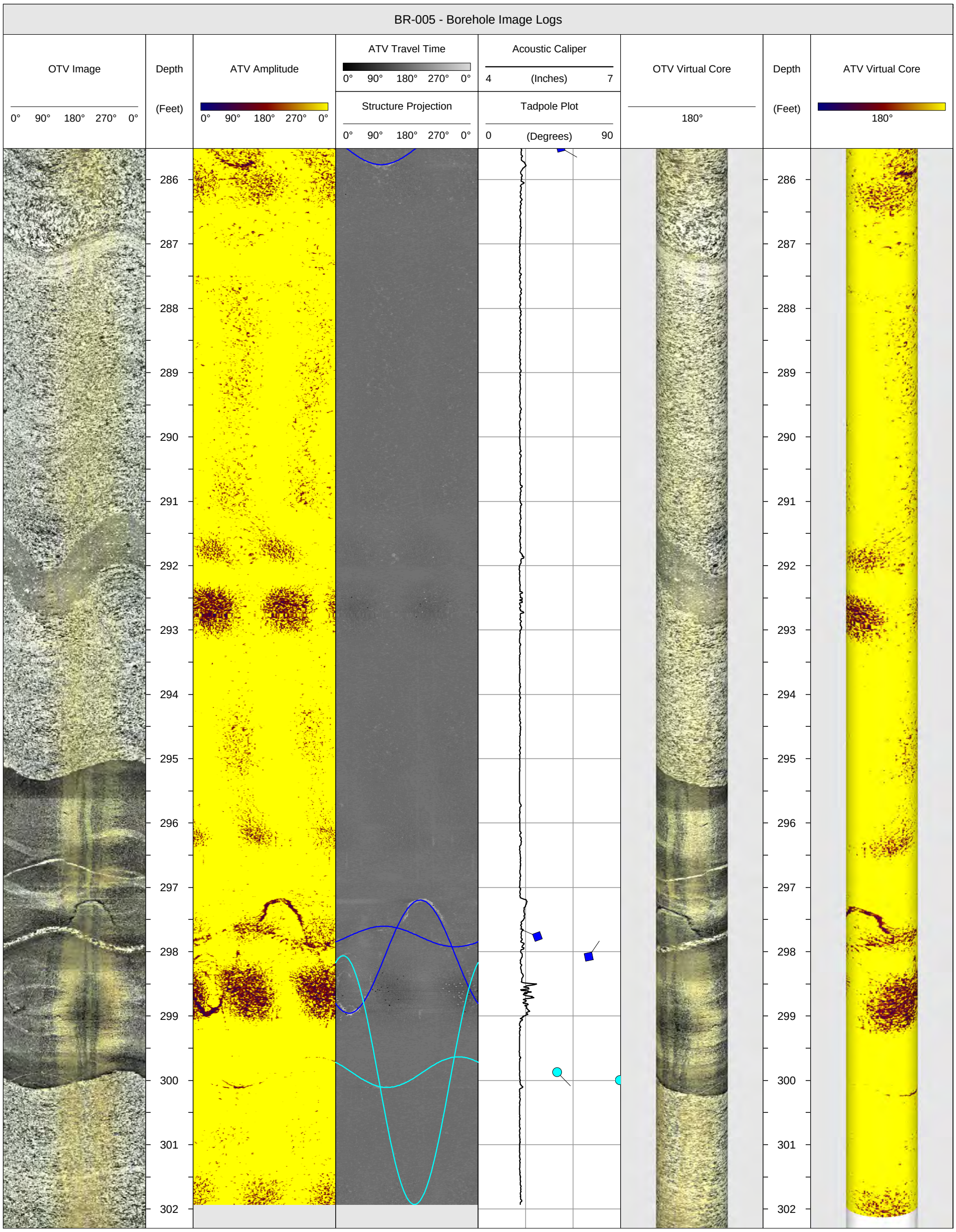
282
283
284
285


BR-005 - Borehole Image Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
OTV Virtual Core
180°
Depth
(Feet)
ATV Virtual Core
180°
286
287
288
289
290
291
292
293
294
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297
298
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300
301
302

HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

BR-005 - BOREHOLE GEOPHYSICAL LOGS

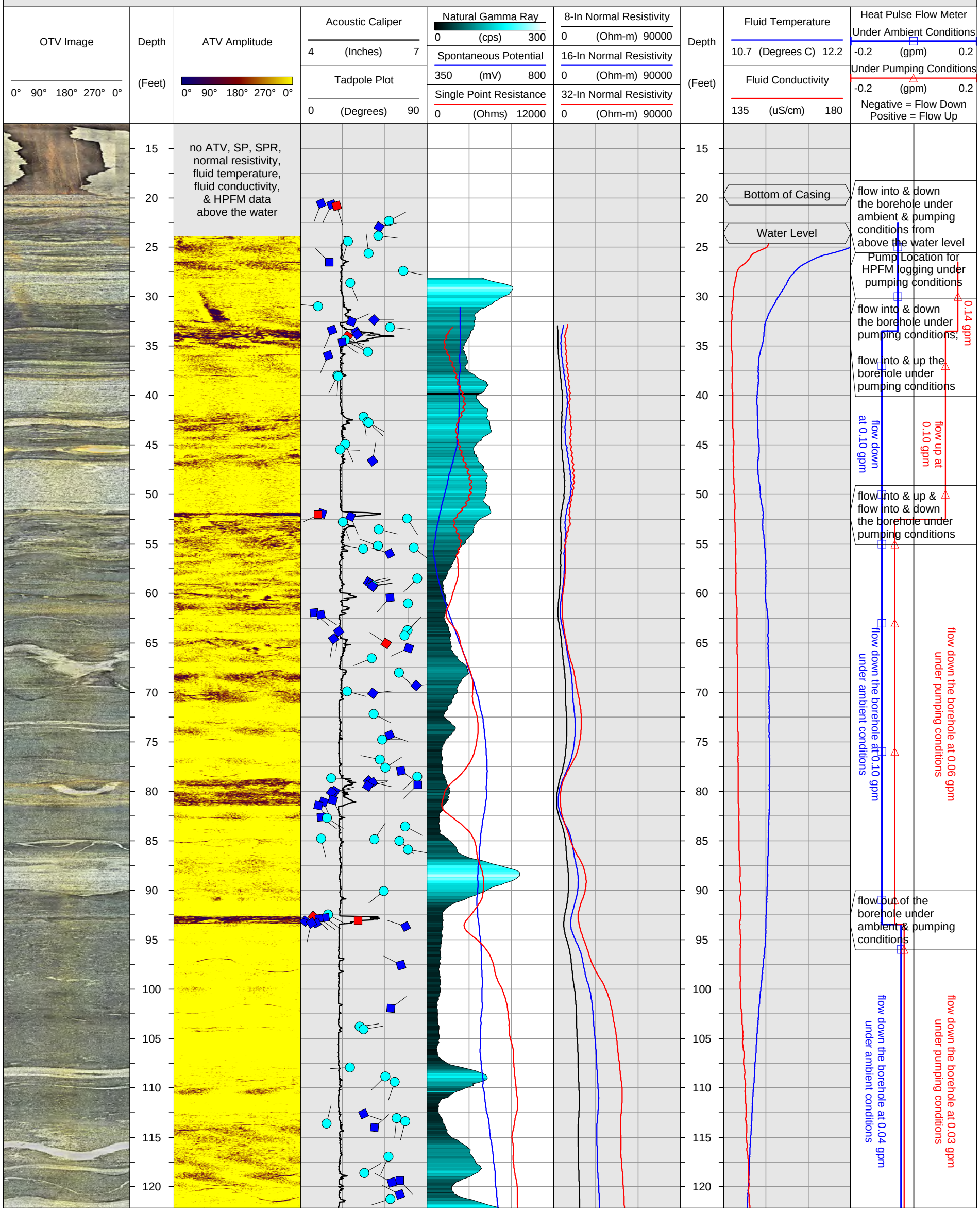
DATE(S) LOGGED: July 7 & 8, 2020

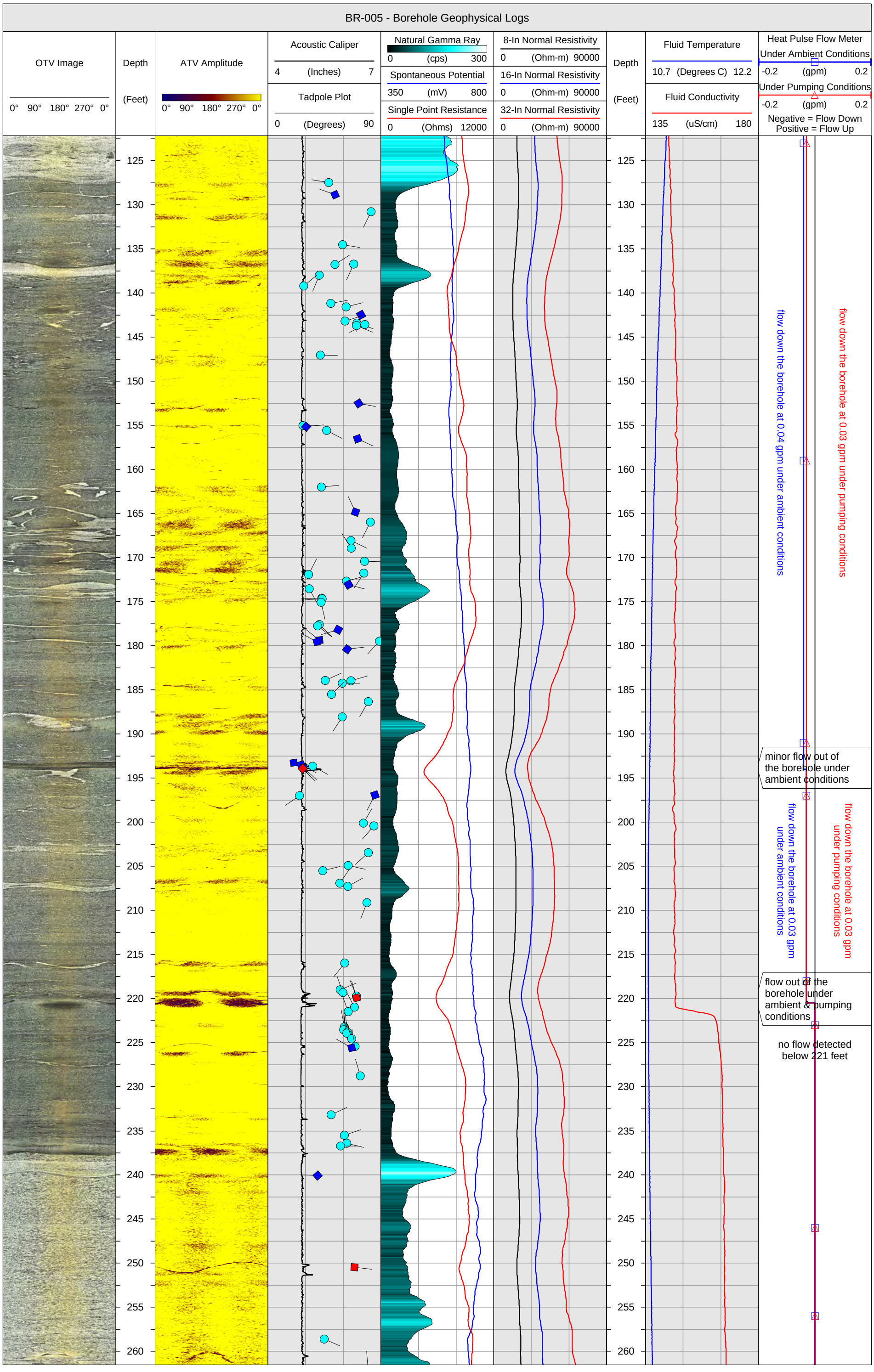
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	LOG DATUM:	Top of the 6-Inch Steel Casing
LOCATION:	Foster, Rhode Island	TOP OF CASING:	3.1 Feet Above the Ground Surface
LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)
PROJECT REP(S) ON-SITE:	John Shannon	BOREHOLE DIAMETER:	5 Inches
LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro	WATER LEVEL DEPTH:	24.3 Feet

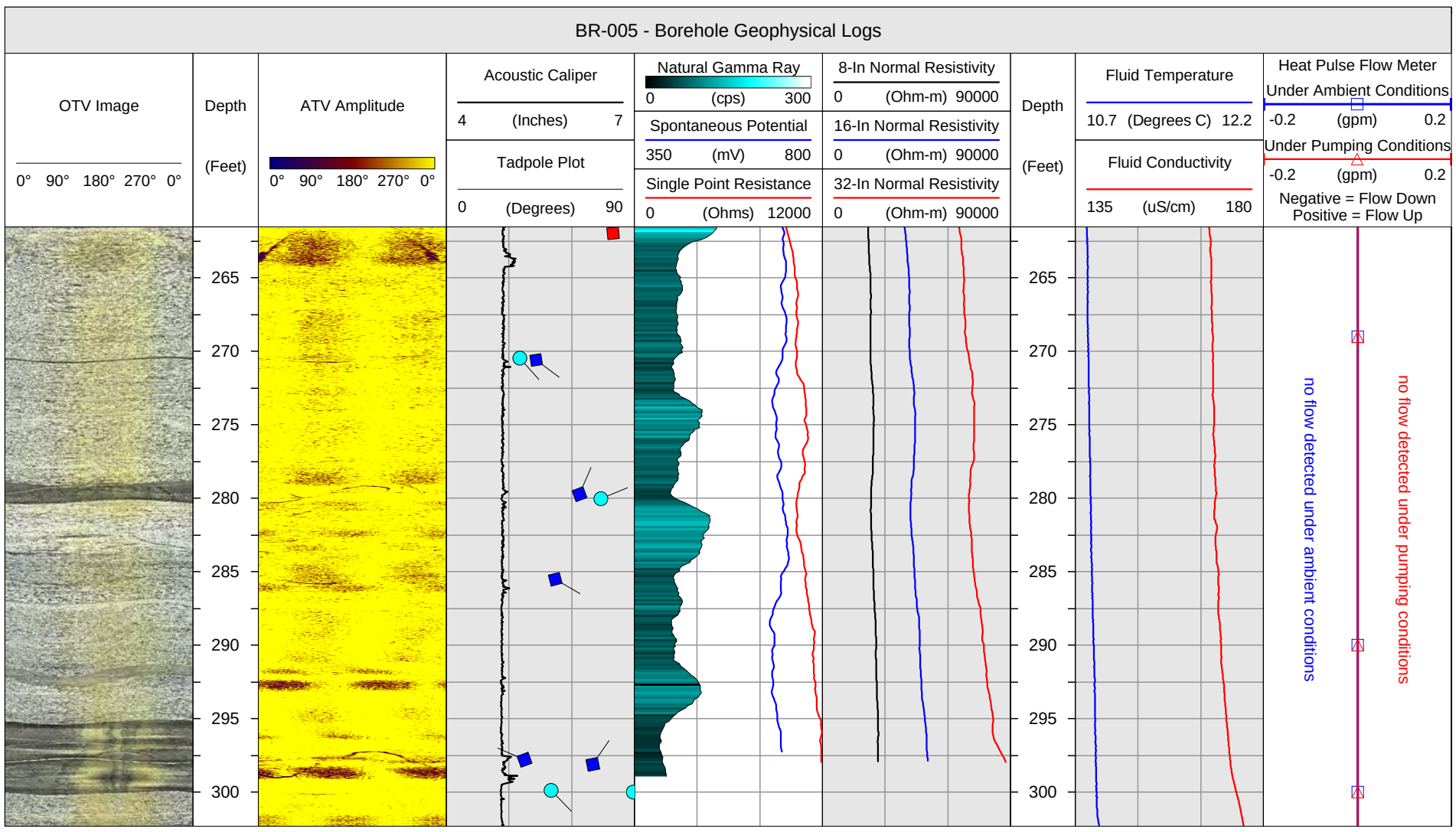
STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

BR-005 - Borehole Geophysical Logs




BR-005 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 300
Spontaneous Potential
350 (mV) 800
Single Point Resistance
0 (Ohms) 12000
8-In Normal Resistivity
0 (Ohm-m) 90000
16-In Normal Resistivity
0 (Ohm-m) 90000
32-In Normal Resistivity
0 (Ohm-m) 90000
Depth
(Feet)
Fluid Temperature
10.7 (Degrees C) 12.2
Fluid Conductivity
135 (uS/cm) 180
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
flow down the borehole at 0.04 gpm under ambient conditions
flow down the borehole at 0.03 gpm under pumping conditions
minor flow out of the borehole under ambient conditions
flow down the borehole at 0.03 gpm under ambient conditions
flow down the borehole at 0.03 gpm under pumping conditions
flow out of the borehole under ambient & pumping conditions
no flow detected below 221 feet
125
130
135
140
145
150
155
160
165
170
175
180
185
190
195
200
205
210
215
220
225
230
235
240
245
250
255
260


BR-005 - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
Acoustic Caliper
4 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 300
Spontaneous Potential
350 (mV) 800
Single Point Resistance
0 (Ohms) 12000
8-In Normal Resistivity
0 (Ohm-m) 90000
16-In Normal Resistivity
0 (Ohm-m) 90000
32-In Normal Resistivity
0 (Ohm-m) 90000
Depth
(Feet)
Fluid Temperature
10.7 (Degrees C) 12.2
Fluid Conductivity
135 (uS/cm) 180
Heat Pulse Flow Meter
Under Ambient Conditions
-0.2 (gpm) 0.2
Under Pumping Conditions
-0.2 (gpm) 0.2
Negative = Flow Down
Positive = Flow Up
265
270
275
280
285
290
295
300
no flow detected under ambient conditions
no flow detected under pumping conditions

APPENDIX 2

SUMMARY OF BOREHOLE FLOW TABLES

HAGER-RICHTER GEOSCIENCE, INC.	
BR-001 - Summary of Borehole Flow Under Ambient & Pumping Conditions	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 6 & 7, 2020
LOG DATUM	Top of the 6-Inch Steel Casing

BR-001 - Summary of Borehole Flow Under Ambient & Pumping Conditions

Depth (Feet)	Comments (flow was not detected in the borehole under ambient conditions)
16.5	Bottom of the 6-Inch Steel Casing
20.8	Ambient Water Level
20.8 - 25.0	no flow detected above the pump under pumping conditions
25.0 - 26.0	Location of Pump for HPFM Under Pumping Conditions
26.0 - 31.9	flow up the borehole at 0.08 gpm under pumping conditions
31.9 - 32.3	minor flow into & up the borehole under pumping conditions
32.3 - 38.5	flow up the borehole at 0.06 gpm under pumping conditions
38.5 - 40.5	minor flow into & up the borehole under pumping conditions
40.5 - 55.1	flow up the borehole at 0.04 gpm under pumping conditions
55.1 - 58.0	minor flow into & up the borehole under pumping conditions
58.0 - 68.9	flow up the borehole at 0.02 gpm under pumping conditions
68.9 - 71.1	minor flow into & up the borehole under pumping conditions
71.1 - 104.1	flow up the borehole at 0.01 gpm under pumping conditions
104.1 - 104.6	minor flow into & up the borehole under pumping conditions
104.6 - 302.0	no flow detected under pumping conditions
302.0	Bottom of the Borehole (based on the geophysical logging)

HAGER-RICHTER GEOSCIENCE, INC.	
BR-002 - Summary of Borehole Flow Under Ambient & Pumping Conditions	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 6 & 7, 2020
LOG DATUM	Top of the 6-Inch Steel Casing

BR-002 - Summary of Borehole Flow Under Ambient & Pumping Conditions

Depth (Feet)	Comments
22.5	Ambient Water Level
15.0 - 16.0	no flow detected in the casing under ambient conditions no flow detected in the casing above the pump under pumping conditions
16.0 - 17.0	Location of Pump for HPFM Under Pumping Conditions
17.0 - 17.6	no flow detected in the casing under ambient conditions flow up the borehole in the casing at 0.08 gpm under pumping conditions
34.5	Bottom of the 6-Inch Steel Casing
34.5 - 36.3	no flow detected under ambient conditions flow up the borehole in the casing at 0.08 gpm under pumping conditions
36.3 - 42.0	flow into & down the borehole under ambient conditions flow into & up the borehole under pumping conditions
42.0 - 67.9	flow down the borehole at 0.07 gpm under ambient conditions flow up the borehole at 0.04 gpm under pumping conditions
67.9 - 68.5	flow into & up of the borehole under pumping conditions
68.5 - 95.1	flow down the borehole at 0.07 gpm under ambient conditions no flow detected under pumping conditions
95.1 - 96.8	flow out of the borehole under ambient conditions
96.8 - 303.0	no flow detected under ambient conditions no flow detected under pumping conditions
303.0	Bottom of the Borehole (based on the geophysical logging)

HAGER-RICHTER GEOSCIENCE, INC.	
BR-003 - Summary of Borehole Flow Under Ambient & Pumping Conditions	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 7 & 8, 2020
LOG DATUM	Top of the 6-Inch Steel Casing

BR-003 - Summary of Borehole Flow Under Ambient & Pumping Conditions

Depth (Feet)	Comments
15.0	Ambient Water Level
15.0 - 16.0	no flow detected in the casing under ambient conditions no flow detected in the casing above the pump under pumping conditions
16.0 - 17.0	Location of Pump for HPFM Under Pumping Conditions
17.0 - 17.6	no flow detected in the casing under ambient conditions flow up the borehole in the casing at 0.15 gpm under pumping conditions
17.6	Bottom of the 6-Inch Steel Casing
17.6 - 19.7	flow into & down the borehole under ambient conditions flow into & up & flow into & down the borehole under pumping conditions
19.7 - 53.4	flow down the borehole at 0.03 gpm under ambient conditions flow down the borehole at 0.02 gpm under pumping conditions
53.4 - 55.5	minor flow out of the borehole under ambient conditions
55.5 - 74.2	flow down the borehole at 0.02 gpm under ambient conditions flow down the borehole at 0.02 gpm under pumping conditions
74.2 - 76.1	minor flow out of the borehole under ambient conditions minor flow out of the borehole under pumping conditions
76.1 - 285.5	flow down the borehole at 0.01 gpm under ambient conditions flow down the borehole at 0.01 gpm under pumping conditions
285.5 - 286.7	minor flow out of the borehole under ambient conditions minor flow out of the borehole under pumping conditions
286.7 - 302.0	no flow detected under ambient conditions no flow detected under pumping conditions
302.0	Bottom of the Borehole (based on the geophysical logging)

HAGER-RICHTER GEOSCIENCE, INC.	
BR-004 - Summary of Borehole Flow Under Ambient & Pumping Conditions	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 6 & 7, 2020
LOG DATUM	Top of the 6-Inch Steel Casing

BR-004 - Summary of Borehole Flow Under Ambient & Pumping Conditions

Depth (Feet)	Comments Flow was not detected with the HPFM under ambient or pumping conditions. Possible flow reported in the table below is based on the fluid temperature and fluid conductivity data under ambient and pumping conditions. Flow interpreted was either not active during HPFM testing or was too low to detect with the HPFM.
15.1	Ambient Water Level
17.0	Bottom of the 6-Inch Steel Casing
17.0 - 22.4	possible flow into or out of the borehole
301.7	Bottom of the Borehole (based on the geophysical logging)

HAGER-RICHTER GEOSCIENCE, INC.	
BR-005 - Summary of Borehole Flow Under Ambient & Pumping Conditions	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 7 & 8, 2020
LOG DATUM	Top of the 6-Inch Steel Casing

BR-005 - Summary of Borehole Flow Under Ambient & Pumping Conditions

Depth (Feet)	Comments
19.7	Bottom of the 6-Inch Steel Casing
19.7 - 23.6	flow into & down the borehole under ambient conditions from above the water flow into & down the borehole under pumping conditions from above the water
23.6	Ambient Water Level
23.6 - 27.0	flow down the borehole at 0.05 gpm under ambient conditions flow down the borehole above the pump under pumping conditions
27.0 - 28.0	Location of Pump for HPFM Under Pumping Conditions
28.0 - 31.9	flow down the borehole at 0.05 gpm under ambient conditions flow up the borehole at 0.14 gpm under pumping conditions
31.9 - 34.7	flow into & down the borehole under ambient conditions flow into & up the borehole under pumping conditions
34.7 - 51.7	flow down the borehole at 0.10 gpm under ambient conditions flow up the borehole at 0.10 gpm under pumping conditions
51.7 - 52.3	flow into & up & flow into & down the borehole under pumping conditions
52.3 - 92.6	flow down the borehole at 0.10 gpm under ambient conditions flow down the borehole at 0.06 gpm under pumping conditions
92.6 - 93.5	flow out of the borehole under ambient conditions flow out of the borehole under pumping conditions
93.5 - 193.3	flow down the borehole at 0.04 gpm under ambient conditions flow down the borehole at 0.03 gpm under pumping conditions
193.3 - 194.3	minor flow out of the borehole under ambient conditions
194.3 - 219.0	flow down the borehole at 0.03 gpm under ambient conditions flow down the borehole at 0.03 gpm under pumping conditions
219.0 - 221.1	flow out of the borehole under ambient conditions flow out of the borehole under pumping conditions
221.1 - 302.3	no flow detected under ambient conditions no flow detected under pumping conditions
302.3	Bottom of the Borehole (based on the geophysical logging)

APPENDIX 3

BEDROCK STRUCTURE STATISTICS PLOTS

HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

ALL BOREHOLES - BEDROCK FRACTURE STATISTICS PLOTS

DATE(S) LOGGED: July 6-8, 2020

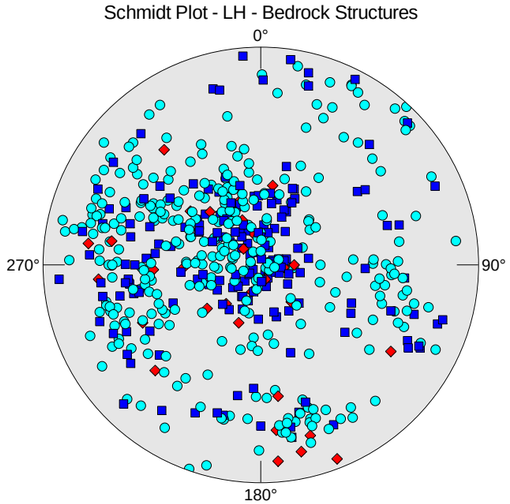
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	ORIENTATION REFERENCE:	True North
LOCATION:	Foster, Rhode Island	MAGNETIC DECLINATION:	14.0° West

STRUCTURE LEGEND

Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

Stereogram - Lower Hemisphere of Bedrock Fractures

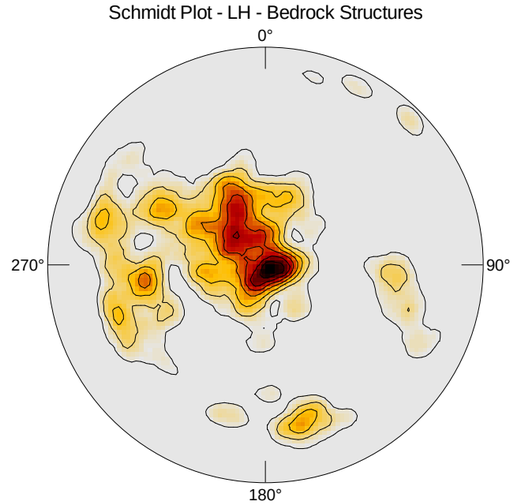
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	548	41.58	107.28
■	183	35.45	120.69
●	335	45.03	107.05
◆	30	39.85	51.26

Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

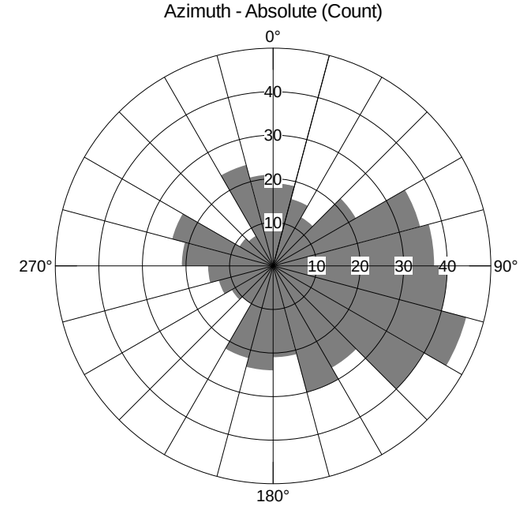
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	548	41.58	107.28
■	183	35.45	120.69
●	335	45.03	107.05
◆	30	39.85	51.26

Dip Azimuth Rose Diagram of Bedrock Fractures

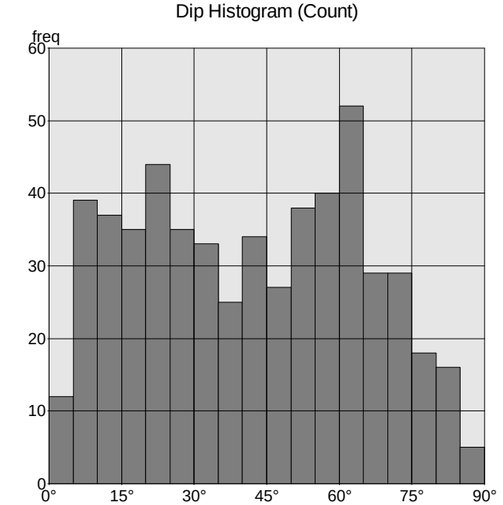
Azimuth - Absolute (Count)



Components:	Azimuth
Counts:	548.00
Mean (2D):	107.28
Std.Dev.:	96.35
Min:	0.17
Max:	357.41

Dip Angle Histogram of Bedrock Fractures

Dip Histogram (Count)



Counts:	548.00
Mean (2D):	41.58
Std.Dev.:	23.10
Min:	2.20
Max:	89.49

HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

BR-001 - BEDROCK FRACTURE STATISTICS PLOTS

DATE(S) LOGGED: July 6 & 7, 2020

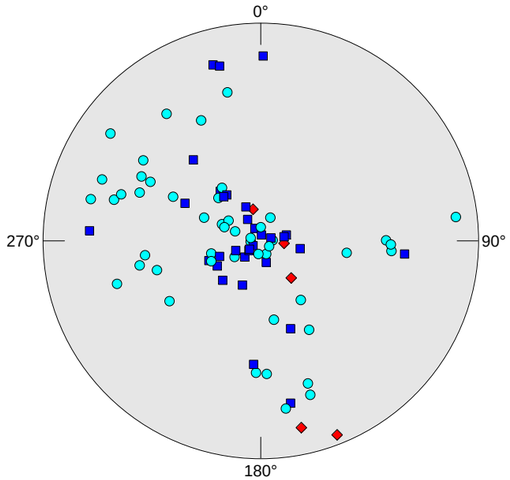
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	ORIENTATION REFERENCE:	True North
LOCATION:	Foster, Rhode Island	MAGNETIC DECLINATION:	14.0° West

STRUCTURE LEGEND

● Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

Stereogram - Lower Hemisphere of Bedrock Fractures

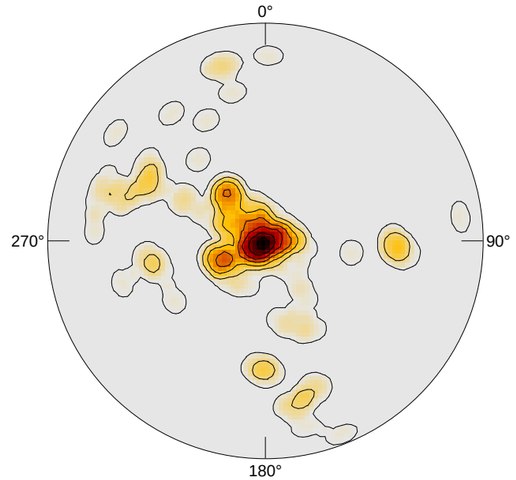
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	86	33.24	87.51
●	49	37.71	89.10
◆	5	39.35	312.79
■	32	25.49	97.26

Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

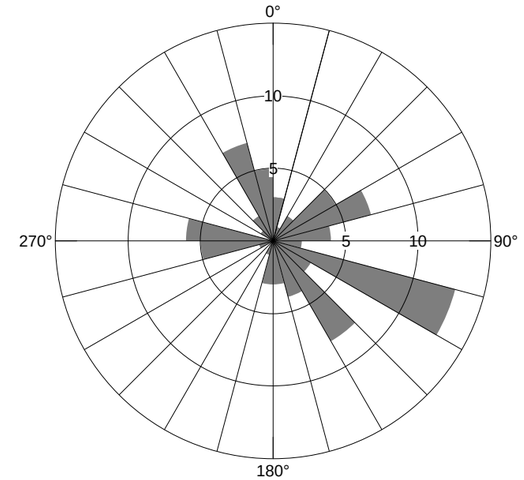
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	86	33.24	87.51
●	49	37.71	89.10
◆	5	39.35	312.79
■	32	25.49	97.26

Dip Azimuth Rose Diagram of Bedrock Fractures

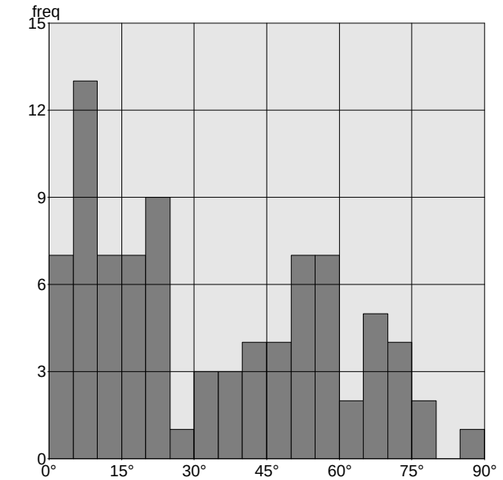
Azimuth - Absolute (Count)



Components:	Azimuth
Counts:	86.00
Mean (2D):	87.51
Std.Dev.:	93.49
Min:	2.28
Max:	357.41

Dip Angle Histogram of Bedrock Fractures

Dip Histogram (Count)



Counts:	86.00
Mean (2D):	33.24
Std.Dev.:	24.12
Min:	2.40
Max:	85.36

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BR-002 - BEDROCK FRACTURE STATISTICS PLOTS

DATE(S) LOGGED: July 6 & 7, 2020

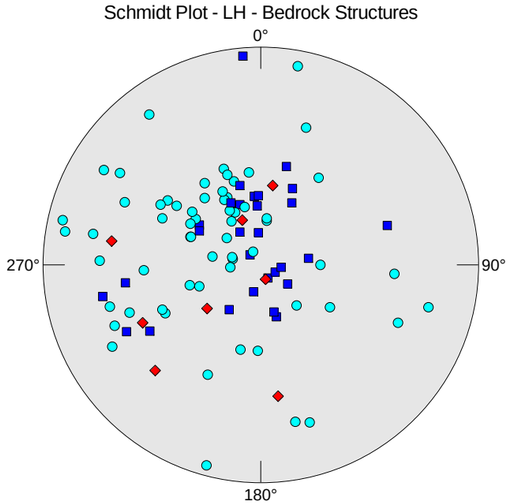
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	ORIENTATION REFERENCE:	True North
LOCATION:	Foster, Rhode Island	MAGNETIC DECLINATION:	14.0° West

STRUCTURE LEGEND

● Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

Stereogram - Lower Hemisphere of Bedrock Fractures

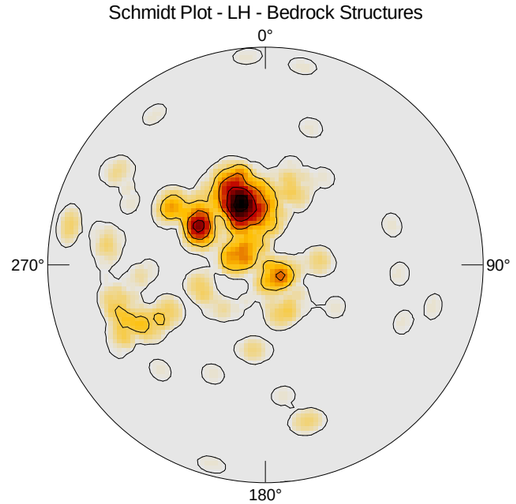
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	99	36.96	121.19
●	62	41.17	118.53
■	29	27.86	161.74
◆	8	37.54	62.34

Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

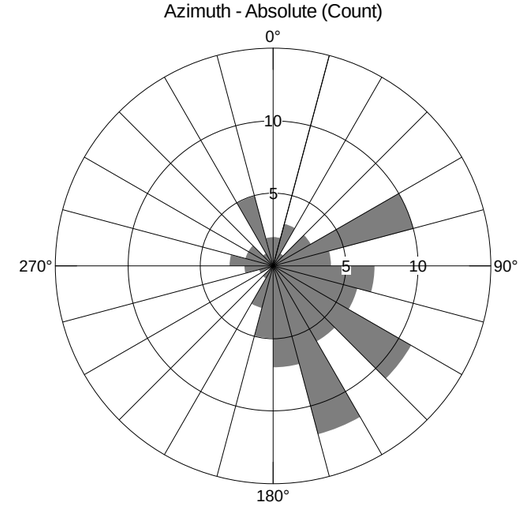
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	99	36.96	121.19
●	62	41.17	118.53
■	29	27.86	161.74
◆	8	37.54	62.34

Dip Azimuth Rose Diagram of Bedrock Fractures

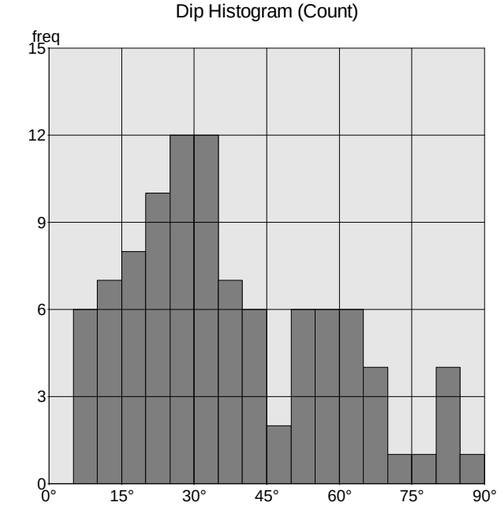
Azimuth - Absolute (Count)



Components:	Azimuth
Counts:	99.00
Mean (2D):	121.19
Std.Dev.:	78.59
Min:	2.10
Max:	352.32

Dip Angle Histogram of Bedrock Fractures

Dip Histogram (Count)



Counts:	99.00
Mean (2D):	36.96
Std.Dev.:	20.77
Min:	5.68
Max:	85.80

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BR-003 - BEDROCK FRACTURE STATISTICS PLOTS

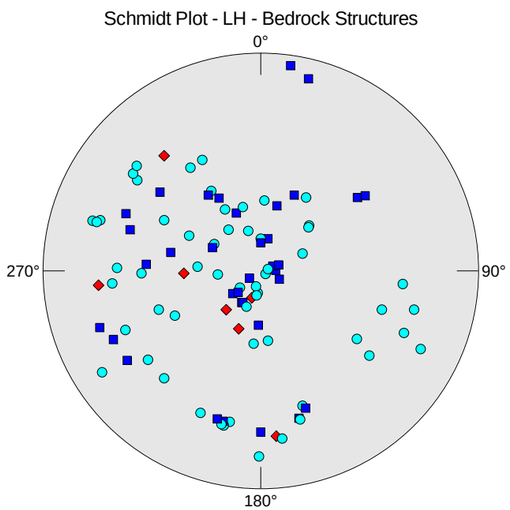
DATE(S) LOGGED: July 7 & 8, 2020

CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	ORIENTATION REFERENCE:	True North
LOCATION:	Foster, Rhode Island	MAGNETIC DECLINATION:	14.0° West

STRUCTURE LEGEND

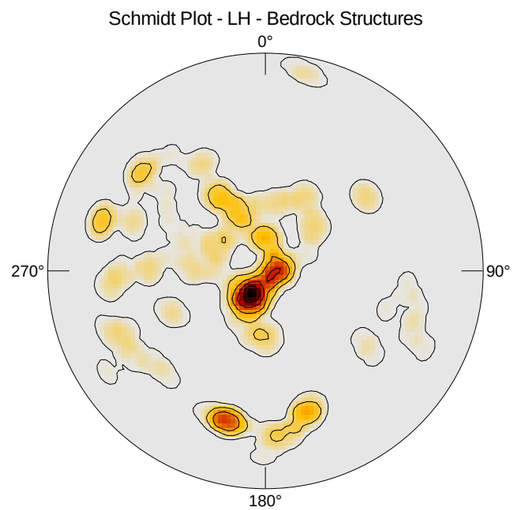
● Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

Stereogram - Lower Hemisphere of Bedrock Fractures



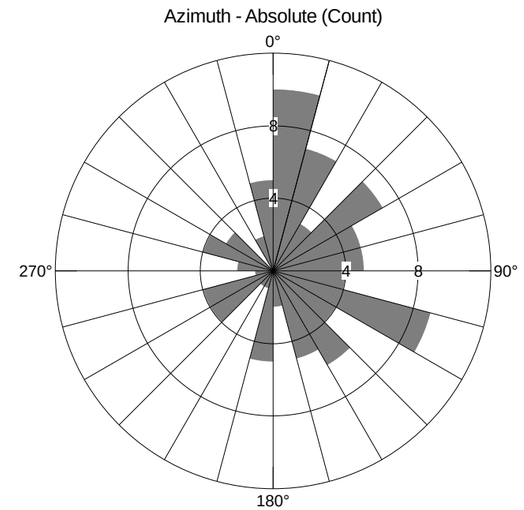
	Counts	Dip[deg]	Azi[deg]
Mean	99	39.68	71.87
■	35	36.63	100.50
●	57	41.65	65.54
◆	7	38.62	52.42

Contoured Stereogram - Lower Hemisphere of Bedrock Fractures



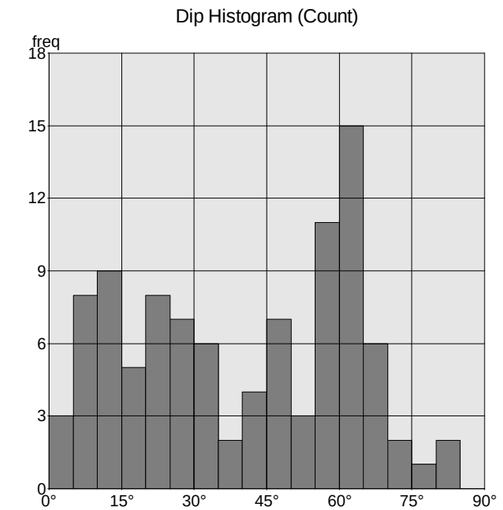
	Counts	Dip[deg]	Azi[deg]
Mean	99	39.68	71.87
■	35	36.63	100.50
●	57	41.65	65.54
◆	7	38.62	52.42

Dip Azimuth Rose Diagram of Bedrock Fractures



Components:	Azimuth
Counts:	99.00
Mean (2D):	71.87
Std.Dev.:	96.84
Min:	0.17
Max:	354.45

Dip Angle Histogram of Bedrock Fractures



Counts:	99.00
Mean (2D):	39.68
Std.Dev.:	22.43
Min:	2.20
Max:	84.96

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BR-004 - BEDROCK FRACTURE STATISTICS PLOTS

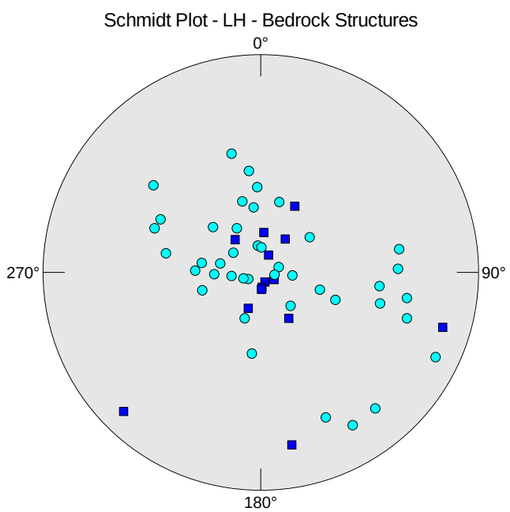
DATE(S) LOGGED: July 6 & 7, 2020

CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	ORIENTATION REFERENCE:	True North
LOCATION:	Foster, Rhode Island	MAGNETIC DECLINATION:	14.0° West

STRUCTURE LEGEND

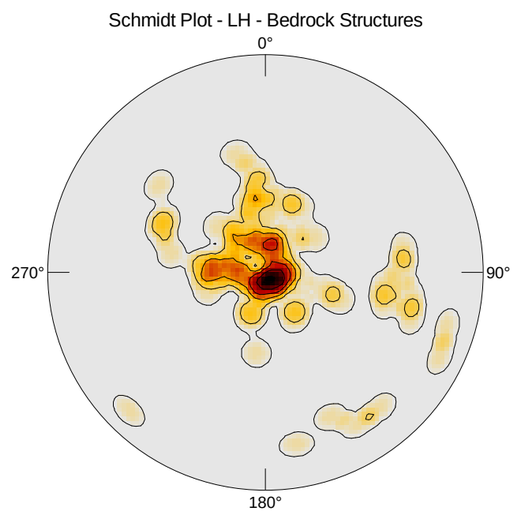
Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

Stereogram - Lower Hemisphere of Bedrock Fractures



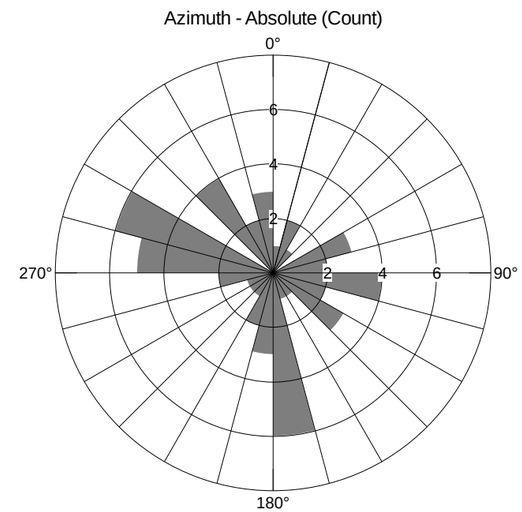
	Counts	Dip[deg]	Azi[deg]
Mean	56	30.07	242.72
■	14	24.70	313.09
●	42	31.78	183.96

Contoured Stereogram - Lower Hemisphere of Bedrock Fractures



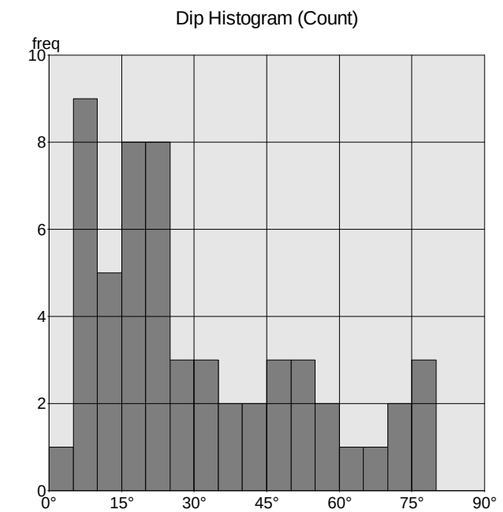
	Counts	Dip[deg]	Azi[deg]
Mean	56	30.07	242.72
■	14	24.70	313.09
●	42	31.78	183.96

Dip Azimuth Rose Diagram of Bedrock Fractures



Components:	Azimuth
Counts:	56.00
Mean (2D):	242.72
Std.Dev.:	133.55
Min:	6.58
Max:	356.98

Dip Angle Histogram of Bedrock Fractures



Counts:	56.00
Mean (2D):	30.07
Std.Dev.:	21.83
Min:	4.05
Max:	78.85

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BR-005 - BEDROCK FRACTURE STATISTICS PLOTS

DATE(S) LOGGED: July 7 & 8, 2020

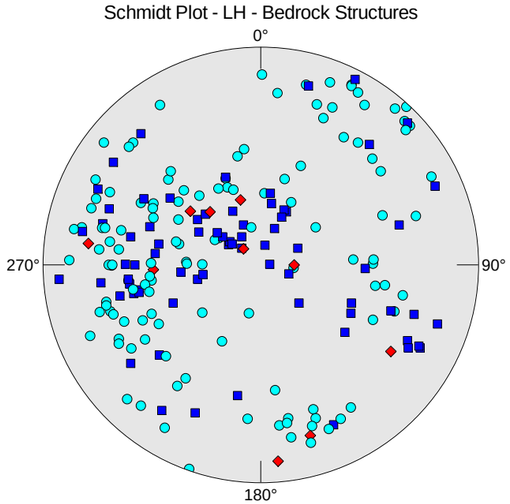
CLIENT:	AECOM	HRGS FILE:	19RG14
PROJECT:	Former NIKE PR-79 Control Area	ORIENTATION REFERENCE:	True North
LOCATION:	Foster, Rhode Island	MAGNETIC DECLINATION:	14.0° West

STRUCTURE LEGEND

● Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

Stereogram - Lower Hemisphere of Bedrock Fractures

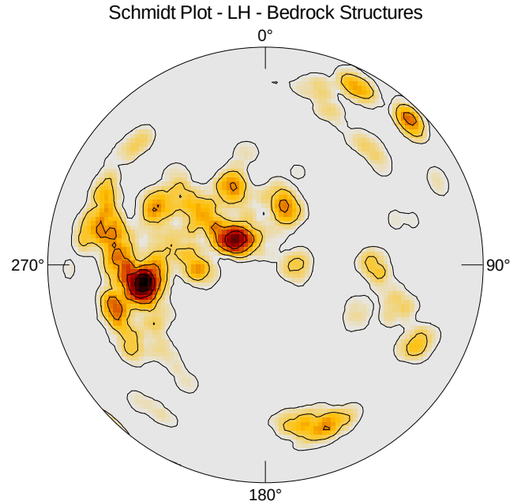
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	208	51.12	116.68
■	73	44.30	126.30
◆	10	42.88	103.06
●	125	55.62	112.21

Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

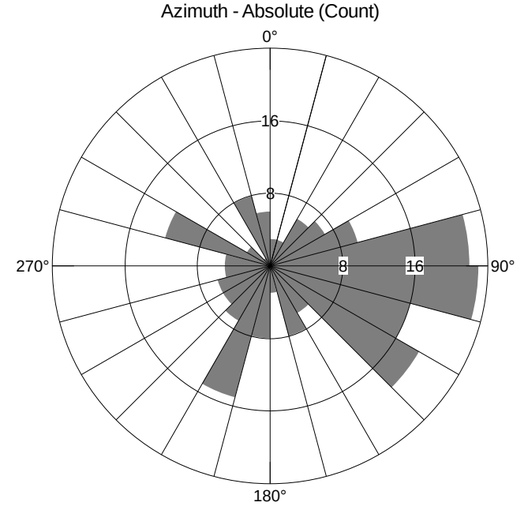
Schmidt Plot - LH - Bedrock Structures



	Counts	Dip[deg]	Azi[deg]
Mean	208	51.12	116.68
■	73	44.30	126.30
◆	10	42.88	103.06
●	125	55.62	112.21

Dip Azimuth Rose Diagram of Bedrock Fractures

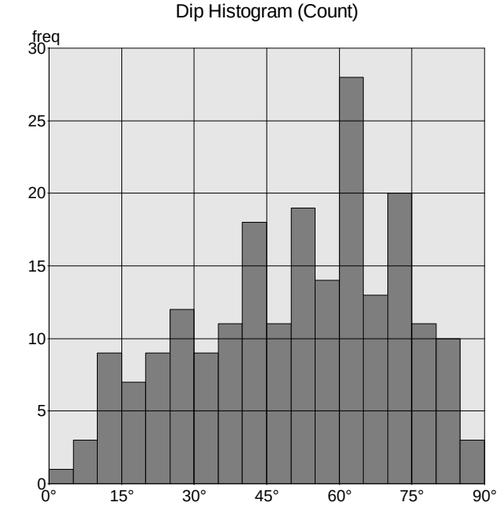
Azimuth - Absolute (Count)



Components:	Azimuth
Counts:	208.00
Mean (2D):	116.68
Std.Dev.:	91.29
Min:	4.97
Max:	354.86

Dip Angle Histogram of Bedrock Fractures

Dip Histogram (Count)



Counts:	208.00
Mean (2D):	51.12
Std.Dev.:	20.60
Min:	3.35
Max:	89.49

APPENDIX 4

TABLES OF BEDROCK STRUCTURES

HAGER-RICHTER GEOSCIENCE, INC.	
BR-001 - TABLE OF BEDROCK FRACTURES	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 6 & 7, 2020
LOG DATUM	Top of the 6-Inch Steel Casing
DIP AZIMUTH	True North (Magnetic Declination = 14.0° West)
DIP ANGLE	Measured from Horizontal

BR-001 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
19.4	106	59	Fracture Rank 1
19.8	339	85	Fracture Rank 3
21.4	321	18	Fracture Rank 3
21.5	256	10	Fracture Rank 2
22.2	345	8	Fracture Rank 2
22.5	270	48	Fracture Rank 1
25.4	84	4	Fracture Rank 1
25.6	45	9	Fracture Rank 2
32.1	148	10	Fracture Rank 2
32.1	166	12	Fracture Rank 3
33.3	69	21	Fracture Rank 2
34.5	23	18	Fracture Rank 2
34.6	126	74	Fracture Rank 1
35.0	156	14	Fracture Rank 2
38.6	266	4	Fracture Rank 1
38.7	276	9	Fracture Rank 3
38.8	282	15	Fracture Rank 2
39.8	275	50	Fracture Rank 1
40.0	275	56	Fracture Rank 2
40.1	272	50	Fracture Rank 1
46.3	154	5	Fracture Rank 2
46.4	59	4	Fracture Rank 2
47.3	202	10	Fracture Rank 1
50.7	76	19	Fracture Rank 1
52.0	78	47	Fracture Rank 1
55.2	50	6	Fracture Rank 2
55.3	54	5	Fracture Rank 2
57.6	259	9	Fracture Rank 2
57.8	252	4	Fracture Rank 2
61.0	140	40	Fracture Rank 2
64.1	93	68	Fracture Rank 2
68.6	342	59	Fracture Rank 1
69.7	342	64	Fracture Rank 1
69.7	181	74	Fracture Rank 2
70.9	141	24	Fracture Rank 2

BR-001 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
72.2	339	5	Fracture Rank 1
79.5	263	79	Fracture Rank 1
79.5	69	16	Fracture Rank 2
90.3	44	21	Fracture Rank 2
90.4	60	19	Fracture Rank 2
104.2	144	25	Fracture Rank 1
104.3	143	22	Fracture Rank 2
115.1	136	23	Fracture Rank 1
115.1	140	22	Fracture Rank 2
116.8	348	77	Fracture Rank 3
120.1	106	4	Fracture Rank 1
122.6	114	16	Fracture Rank 1
124.5	2	51	Fracture Rank 1
127.2	326	27	Fracture Rank 1
133.3	3	47	Fracture Rank 2
139.8	104	69	Fracture Rank 1
140.3	68	20	Fracture Rank 1
143.8	111	67	Fracture Rank 1
144.2	57	42	Fracture Rank 1
155.9	122	14	Fracture Rank 1
162.3	350	30	Fracture Rank 1
170.0	341	35	Fracture Rank 2
171.8	116	32	Fracture Rank 2
172.3	117	37	Fracture Rank 1
173.7	154	52	Fracture Rank 1
179.4	111	10	Fracture Rank 1
185.4	83	45	Fracture Rank 1
189.1	113	23	Fracture Rank 1
191.1	58	12	Fracture Rank 1
191.2	69	10	Fracture Rank 2
199.1	357	51	Fracture Rank 1
200.9	349	65	Fracture Rank 2
210.3	73	58	Fracture Rank 1
210.6	74	41	Fracture Rank 1
218.3	278	33	Fracture Rank 1
219.2	165	73	Fracture Rank 2
219.6	167	59	Fracture Rank 1
222.2	167	72	Fracture Rank 2
228.7	332	38	Fracture Rank 1
232.7	304	4	Fracture Rank 1
232.8	11	5	Fracture Rank 1
237.5	351	67	Fracture Rank 1
239.3	111	15	Fracture Rank 1
262.7	185	2	Fracture Rank 2
265.0	112	50	Fracture Rank 1

BR-001 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
267.7	182	5	Fracture Rank 1
270.0	118	48	Fracture Rank 1
270.6	118	53	Fracture Rank 1
271.6	108	57	Fracture Rank 1
280.6	124	55	Fracture Rank 1
289.1	143	62	Fracture Rank 1

HAGER-RICHTER GEOSCIENCE, INC.	
BR-002 - TABLE OF BEDROCK FRACTURES	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 6 & 7, 2020
LOG DATUM	Top of the 6-Inch Steel Casing
DIP AZIMUTH	True North (Magnetic Declination = 14.0° West)
DIP ANGLE	Measured from Horizontal

BR-002 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
35.0	123	66	Fracture Rank 1
36.4	262	18	Fracture Rank 2
36.6	306	12	Fracture Rank 2
37.6	148	15	Fracture Rank 2
37.6	103	83	Fracture Rank 1
37.7	157	18	Fracture Rank 3
38.4	100	81	Fracture Rank 1
38.9	319	20	Fracture Rank 1
39.6	15	10	Fracture Rank 2
40.2	189	30	Fracture Rank 3
40.5	352	51	Fracture Rank 3
41.1	123	28	Fracture Rank 2
41.8	14	33	Fracture Rank 1
41.9	343	20	Fracture Rank 2
42.4	100	19	Fracture Rank 1
48.6	133	6	Fracture Rank 2
49.4	63	41	Fracture Rank 1
50.6	173	35	Fracture Rank 1
50.8	188	17	Fracture Rank 1
50.8	92	63	Fracture Rank 1
54.2	100	67	Fracture Rank 1
55.9	102	11	Fracture Rank 1
56.1	191	82	Fracture Rank 1
56.3	15	85	Fracture Rank 1
58.5	176	22	Fracture Rank 2
58.7	187	18	Fracture Rank 1
58.9	174	26	Fracture Rank 2
59.1	178	26	Fracture Rank 2
59.4	203	31	Fracture Rank 2
59.6	161	24	Fracture Rank 2
68.0	35	21	Fracture Rank 2
68.2	51	26	Fracture Rank 3
74.2	330	6	Fracture Rank 2
74.3	297	6	Fracture Rank 2
77.7	67	62	Fracture Rank 1

BR-002 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
82.8	341	6	Fracture Rank 3
82.9	277	8	Fracture Rank 2
95.3	195	39	Fracture Rank 2
95.3	26	47	Fracture Rank 1
95.7	45	58	Fracture Rank 3
96.0	64	51	Fracture Rank 3
96.1	59	50	Fracture Rank 2
96.6	284	68	Fracture Rank 1
97.1	105	11	Fracture Rank 1
107.4	146	20	Fracture Rank 1
111.1	112	29	Fracture Rank 1
111.3	125	30	Fracture Rank 1
111.5	128	33	Fracture Rank 1
111.8	112	28	Fracture Rank 1
112.8	115	41	Fracture Rank 1
112.9	125	43	Fracture Rank 1
113.2	115	58	Fracture Rank 1
114.1	153	28	Fracture Rank 1
115.1	153	22	Fracture Rank 1
115.3	150	28	Fracture Rank 1
115.9	162	33	Fracture Rank 1
117.2	150	24	Fracture Rank 1
117.6	164	23	Fracture Rank 1
120.4	125	39	Fracture Rank 1
127.6	61	67	Fracture Rank 1
129.6	82	53	Fracture Rank 2
135.0	302	31	Fracture Rank 1
138.2	85	12	Fracture Rank 1
151.6	63	58	Fracture Rank 2
153.1	198	56	Fracture Rank 1
178.2	70	54	Fracture Rank 1
181.8	140	33	Fracture Rank 1
181.9	154	26	Fracture Rank 2
182.1	66	41	Fracture Rank 1
183.0	207	26	Fracture Rank 2
189.0	70	25	Fracture Rank 1
189.1	74	28	Fracture Rank 1
191.4	274	52	Fracture Rank 1
197.3	343	65	Fracture Rank 1
197.4	348	63	Fracture Rank 1
209.9	120	31	Fracture Rank 1
216.1	152	31	Fracture Rank 1
218.2	87	45	Fracture Rank 1
219.5	121	45	Fracture Rank 1
228.8	75	61	Fracture Rank 1

BR-002 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
232.8	143	75	Fracture Rank 1
235.8	175	12	Fracture Rank 2
237.4	2	32	Fracture Rank 1
238.9	175	86	Fracture Rank 2
242.4	128	16	Fracture Rank 1
242.6	150	6	Fracture Rank 1
248.5	159	39	Fracture Rank 1
248.7	165	31	Fracture Rank 2
254.2	145	38	Fracture Rank 1
255.0	119	27	Fracture Rank 2
262.2	79	63	Fracture Rank 2
269.7	270	22	Fracture Rank 1
272.3	99	59	Fracture Rank 3
277.0	293	58	Fracture Rank 1
279.6	121	73	Fracture Rank 1
284.2	159	36	Fracture Rank 1
285.6	214	40	Fracture Rank 1
286.0	253	51	Fracture Rank 2
290.9	345	18	Fracture Rank 2

HAGER-RICHTER GEOSCIENCE, INC.	
BR-003 - TABLE OF BEDROCK FRACTURES	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 7 & 8, 2020
LOG DATUM	Top of the 6-Inch Steel Casing
DIP AZIMUTH	True North (Magnetic Declination = 14.0° West)
DIP ANGLE	Measured from Horizontal

BR-003 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
17.9	267	6	Fracture Rank 2
18.7	51	10	Fracture Rank 1
18.8	31	14	Fracture Rank 2
18.9	3	21	Fracture Rank 2
19.0	21	23	Fracture Rank 3
19.2	42	20	Fracture Rank 3
19.2	140	59	Fracture Rank 3
19.4	88	29	Fracture Rank 3
19.6	19	11	Fracture Rank 3
20.4	85	16	Fracture Rank 1
21.5	247	17	Fracture Rank 1
21.6	227	25	Fracture Rank 1
21.7	194	25	Fracture Rank 2
21.8	204	31	Fracture Rank 2
22.9	113	57	Fracture Rank 2
24.5	126	60	Fracture Rank 1
26.3	102	35	Fracture Rank 2
27.2	91	56	Fracture Rank 1
27.5	8	8	Fracture Rank 1
27.6	30	14	Fracture Rank 2
27.8	51	13	Fracture Rank 2
27.9	56	5	Fracture Rank 2
28.2	47	12	Fracture Rank 2
28.2	108	66	Fracture Rank 1
30.5	343	55	Fracture Rank 1
33.1	93	44	Fracture Rank 2
34.0	212	33	Fracture Rank 1
34.2	233	47	Fracture Rank 2
34.5	234	50	Fracture Rank 2
34.8	89	46	Fracture Rank 1
34.8	228	24	Fracture Rank 1
35.3	157	24	Fracture Rank 2
35.4	162	16	Fracture Rank 1
35.5	150	27	Fracture Rank 1
35.7	148	36	Fracture Rank 1

BR-003 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
35.8	145	35	Fracture Rank 2
35.9	150	32	Fracture Rank 2
42.6	107	70	Fracture Rank 1
47.3	127	63	Fracture Rank 1
47.5	146	48	Fracture Rank 1
47.6	128	49	Fracture Rank 2
48.0	193	12	Fracture Rank 2
52.5	305	45	Fracture Rank 1
53.3	12	60	Fracture Rank 1
53.6	13	62	Fracture Rank 1
53.9	14	61	Fracture Rank 2
53.9	15	62	Fracture Rank 1
54.1	16	60	Fracture Rank 2
55.4	248	5	Fracture Rank 2
55.5	252	7	Fracture Rank 2
57.7	85	58	Fracture Rank 1
62.5	85	64	Fracture Rank 3
63.3	0	63	Fracture Rank 2
74.6	342	56	Fracture Rank 2
74.8	354	65	Fracture Rank 3
75.6	94	24	Fracture Rank 1
76.0	296	8	Fracture Rank 2
76.6	354	27	Fracture Rank 1
78.3	305	2	Fracture Rank 1
80.1	353	67	Fracture Rank 1
91.9	179	12	Fracture Rank 1
92.0	179	11	Fracture Rank 2
99.9	18	6	Fracture Rank 1
101.9	296	71	Fracture Rank 1
108.6	56	63	Fracture Rank 2
114.4	6	27	Fracture Rank 1
114.5	120	20	Fracture Rank 1
115.1	118	42	Fracture Rank 1
119.4	164	25	Fracture Rank 1
120.5	345	60	Fracture Rank 2
121.8	142	20	Fracture Rank 1
125.8	294	61	Fracture Rank 1
130.0	345	60	Fracture Rank 1
131.3	107	68	Fracture Rank 1
153.3	308	53	Fracture Rank 1
156.3	288	49	Fracture Rank 1
162.5	275	55	Fracture Rank 1
169.9	194	80	Fracture Rank 2
173.7	152	48	Fracture Rank 1
176.6	57	76	Fracture Rank 1

BR-003 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
177.8	183	27	Fracture Rank 1
185.3	188	85	Fracture Rank 2
199.9	11	9	Fracture Rank 1
200.0	22	14	Fracture Rank 1
200.8	1	74	Fracture Rank 1
217.7	284	62	Fracture Rank 1
222.6	108	53	Fracture Rank 2
222.9	116	30	Fracture Rank 1
228.1	62	37	Fracture Rank 1
233.3	254	3	Fracture Rank 1
235.9	130	64	Fracture Rank 1
251.2	42	56	Fracture Rank 1
251.4	52	56	Fracture Rank 1
254.0	71	68	Fracture Rank 2
286.1	65	64	Fracture Rank 2
289.9	116	20	Fracture Rank 2
291.6	66	58	Fracture Rank 1
293.2	23	60	Fracture Rank 1
295.5	69	42	Fracture Rank 1

HAGER-RICHTER GEOSCIENCE, INC.	
BR-004 - TABLE OF BEDROCK FRACTURES	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 6 & 7, 2020
LOG DATUM	Top of the 6-Inch Steel Casing
DIP AZIMUTH	True North (Magnetic Declination = 14.0° West)
DIP ANGLE	Measured from Horizontal

BR-004 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
17.5	328	20	Fracture Rank 2
20.6	337	4	Fracture Rank 2
20.7	299	6	Fracture Rank 2
22.2	205	7	Fracture Rank 2
22.3	185	15	Fracture Rank 2
22.4	217	16	Fracture Rank 2
29.8	276	12	Fracture Rank 1
29.9	286	23	Fracture Rank 1
34.0	61	5	Fracture Rank 1
44.6	234	23	Fracture Rank 1
49.5	350	70	Fracture Rank 2
49.8	20	14	Fracture Rank 2
64.1	73	23	Fracture Rank 1
70.2	166	47	Fracture Rank 1
79.0	112	44	Fracture Rank 1
81.1	129	53	Fracture Rank 1
87.8	173	39	Fracture Rank 1
98.4	354	6	Fracture Rank 2
101.1	102	37	Fracture Rank 1
109.0	195	27	Fracture Rank 1
110.4	88	18	Fracture Rank 1
123.7	336	62	Fracture Rank 1
130.8	7	31	Fracture Rank 1
139.3	290	30	Fracture Rank 1
142.2	103	16	Fracture Rank 1
142.5	45	79	Fracture Rank 2
157.8	20	18	Fracture Rank 1
159.5	207	28	Fracture Rank 2
160.0	173	25	Fracture Rank 1
160.3	165	28	Fracture Rank 1
186.7	296	78	Fracture Rank 1
210.3	177	32	Fracture Rank 1
229.3	174	10	Fracture Rank 1
237.7	280	58	Fracture Rank 1
238.9	287	76	Fracture Rank 2

BR-004 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
241.3	134	25	Fracture Rank 1
245.9	151	19	Fracture Rank 1
247.1	92	25	Fracture Rank 1
247.4	100	23	Fracture Rank 1
247.5	142	16	Fracture Rank 2
247.9	126	13	Fracture Rank 1
250.8	118	43	Fracture Rank 1
266.3	268	53	Fracture Rank 1
266.6	285	47	Fracture Rank 1
266.7	277	46	Fracture Rank 1
267.1	287	60	Fracture Rank 1
269.3	260	54	Fracture Rank 1
270.2	320	71	Fracture Rank 1
270.6	329	71	Fracture Rank 1
274.8	182	9	Fracture Rank 1
275.6	70	7	Fracture Rank 1
288.7	83	11	Fracture Rank 1
288.8	357	6	Fracture Rank 2
292.1	253	7	Fracture Rank 1
292.4	282	5	Fracture Rank 1
298.2	318	17	Fracture Rank 1

HAGER-RICHTER GEOSCIENCE, INC.	
BR-005 - TABLE OF BEDROCK FRACTURES	
CLIENT	AECOM
PROJECT	Former NIKE PR-79 Control Area
LOCATION	Foster, Rhode Island
HRGS FILE	19RG14
DATE LOGGED	July 7 & 8, 2020
LOG DATUM	Top of the 6-Inch Steel Casing
DIP AZIMUTH	True North (Magnetic Declination = 14.0° West)
DIP ANGLE	Measured from Horizontal

BR-005 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
20.6	201	15	Fracture Rank 2
20.7	206	22	Fracture Rank 2
20.8	163	26	Fracture Rank 3
22.4	62	63	Fracture Rank 1
22.9	77	56	Fracture Rank 2
23.9	96	55	Fracture Rank 1
24.4	196	34	Fracture Rank 1
25.6	353	49	Fracture Rank 1
26.5	315	20	Fracture Rank 2
27.4	102	73	Fracture Rank 1
28.6	158	36	Fracture Rank 1
31.0	276	13	Fracture Rank 1
32.3	90	52	Fracture Rank 2
32.5	66	36	Fracture Rank 2
33.1	96	64	Fracture Rank 1
33.4	203	23	Fracture Rank 2
33.6	102	40	Fracture Rank 2
33.8	96	40	Fracture Rank 2
34.0	127	34	Fracture Rank 3
34.4	104	32	Fracture Rank 1
34.6	126	30	Fracture Rank 2
35.6	296	48	Fracture Rank 1
35.9	204	20	Fracture Rank 2
38.0	206	26	Fracture Rank 1
38.1	183	27	Fracture Rank 1
42.2	172	45	Fracture Rank 1
42.6	120	48	Fracture Rank 1
42.8	133	49	Fracture Rank 1
44.9	157	32	Fracture Rank 1
45.4	93	28	Fracture Rank 1
46.6	10	51	Fracture Rank 2
51.9	246	15	Fracture Rank 2
52.0	270	13	Fracture Rank 3
52.2	158	36	Fracture Rank 2
52.4	148	76	Fracture Rank 1

BR-005 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
52.8	160	30	Fracture Rank 1
53.5	104	56	Fracture Rank 1
55.2	289	55	Fracture Rank 1
55.4	128	81	Fracture Rank 1
55.5	281	45	Fracture Rank 1
56.0	288	63	Fracture Rank 2
58.5	225	83	Fracture Rank 1
58.8	78	49	Fracture Rank 2
59.1	77	50	Fracture Rank 2
59.2	83	51	Fracture Rank 1
59.3	82	51	Fracture Rank 2
60.4	222	64	Fracture Rank 2
61.0	181	76	Fracture Rank 1
62.0	132	10	Fracture Rank 2
62.2	123	14	Fracture Rank 2
63.7	45	76	Fracture Rank 1
63.8	188	27	Fracture Rank 2
64.3	40	74	Fracture Rank 1
64.6	190	23	Fracture Rank 2
65.1	304	61	Fracture Rank 3
65.5	246	77	Fracture Rank 2
66.6	248	51	Fracture Rank 1
68.0	134	70	Fracture Rank 1
69.3	86	82	Fracture Rank 2
69.9	106	33	Fracture Rank 1
70.1	84	51	Fracture Rank 2
72.2	117	52	Fracture Rank 1
74.3	110	63	Fracture Rank 2
74.8	90	58	Fracture Rank 1
76.8	282	56	Fracture Rank 1
77.6	57	60	Fracture Rank 1
78.0	125	71	Fracture Rank 2
78.5	227	83	Fracture Rank 1
78.7	91	22	Fracture Rank 1
79.0	90	48	Fracture Rank 2
79.1	102	51	Fracture Rank 2
79.3	226	83	Fracture Rank 2
79.5	77	48	Fracture Rank 2
80.0	77	24	Fracture Rank 2
80.1	80	22	Fracture Rank 2
80.9	153	23	Fracture Rank 2
81.1	156	16	Fracture Rank 2
81.5	145	13	Fracture Rank 2
82.6	127	15	Fracture Rank 2
82.7	123	19	Fracture Rank 1

BR-005 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
83.6	117	74	Fracture Rank 1
84.8	166	15	Fracture Rank 1
84.9	34	53	Fracture Rank 1
85.0	132	70	Fracture Rank 1
85.9	101	76	Fracture Rank 1
90.1	232	59	Fracture Rank 1
92.5	119	20	Fracture Rank 1
92.7	133	9	Fracture Rank 3
92.8	126	18	Fracture Rank 2
92.9	126	13	Fracture Rank 2
93.1	87	41	Fracture Rank 3
93.1	264	3	Fracture Rank 2
93.3	288	11	Fracture Rank 2
93.3	193	8	Fracture Rank 2
93.7	289	75	Fracture Rank 2
97.6	298	71	Fracture Rank 2
102.0	53	64	Fracture Rank 2
103.8	82	42	Fracture Rank 1
104.1	80	45	Fracture Rank 1
107.9	267	35	Fracture Rank 1
108.9	226	60	Fracture Rank 1
109.4	199	67	Fracture Rank 1
112.6	109	45	Fracture Rank 2
113.0	186	68	Fracture Rank 1
113.4	194	74	Fracture Rank 1
113.6	14	19	Fracture Rank 1
114.0	48	53	Fracture Rank 2
117.0	203	63	Fracture Rank 1
118.6	60	45	Fracture Rank 1
119.4	137	71	Fracture Rank 2
119.6	297	65	Fracture Rank 2
120.8	297	71	Fracture Rank 2
121.3	252	64	Fracture Rank 1
127.5	279	48	Fracture Rank 1
128.8	290	53	Fracture Rank 2
130.8	207	82	Fracture Rank 1
134.5	99	60	Fracture Rank 1
136.7	204	69	Fracture Rank 1
136.8	57	53	Fracture Rank 1
138.0	202	41	Fracture Rank 1
139.2	51	29	Fracture Rank 1
141.2	79	50	Fracture Rank 1
141.6	77	62	Fracture Rank 1
142.5	195	74	Fracture Rank 2
143.2	73	62	Fracture Rank 1

BR-005 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
143.4	109	71	Fracture Rank 1
143.6	243	77	Fracture Rank 1
143.7	112	71	Fracture Rank 1
147.1	91	42	Fracture Rank 1
152.5	101	72	Fracture Rank 2
155.0	91	28	Fracture Rank 1
155.1	85	30	Fracture Rank 2
155.6	118	47	Fracture Rank 1
156.5	115	71	Fracture Rank 2
162.0	84	43	Fracture Rank 1
164.8	335	70	Fracture Rank 2
166.0	207	82	Fracture Rank 1
168.1	116	66	Fracture Rank 1
168.9	328	66	Fracture Rank 1
170.4	92	77	Fracture Rank 1
171.7	213	77	Fracture Rank 1
171.9	27	32	Fracture Rank 1
172.7	75	63	Fracture Rank 1
173.0	105	64	Fracture Rank 2
173.5	151	33	Fracture Rank 1
174.6	269	43	Fracture Rank 1
174.7	267	43	Fracture Rank 1
175.1	168	42	Fracture Rank 1
177.6	134	41	Fracture Rank 1
177.7	128	40	Fracture Rank 1
178.2	254	56	Fracture Rank 2
179.4	309	41	Fracture Rank 2
179.5	223	89	Fracture Rank 1
179.5	298	39	Fracture Rank 2
180.4	84	63	Fracture Rank 2
183.9	66	46	Fracture Rank 1
184.0	74	66	Fracture Rank 1
184.3	90	59	Fracture Rank 1
185.5	46	51	Fracture Rank 1
186.3	209	80	Fracture Rank 1
188.0	213	59	Fracture Rank 1
193.2	127	21	Fracture Rank 2
193.5	118	26	Fracture Rank 2
193.6	119	36	Fracture Rank 1
193.8	132	29	Fracture Rank 2
193.9	136	28	Fracture Rank 3
196.9	207	85	Fracture Rank 2
197.0	236	25	Fracture Rank 1
200.1	31	76	Fracture Rank 1
200.4	221	84	Fracture Rank 1

BR-005 - TABLE OF BEDROCK FRACTURES

Depth (Feet)	Dip Azimuth (Degrees)	Dip Angle (Degrees)	Bedrock Fracture Category
203.5	227	80	Fracture Rank 1
204.9	103	64	Fracture Rank 1
205.5	76	44	Fracture Rank 1
206.9	35	57	Fracture Rank 1
207.2	61	64	Fracture Rank 1
209.1	201	79	Fracture Rank 1
216.0	219	61	Fracture Rank 1
219.0	67	58	Fracture Rank 1
219.3	340	60	Fracture Rank 1
219.7	337	71	Fracture Rank 1
219.9	344	71	Fracture Rank 3
221.0	333	69	Fracture Rank 1
221.5	340	64	Fracture Rank 1
223.2	350	61	Fracture Rank 1
223.5	5	60	Fracture Rank 1
223.8	353	64	Fracture Rank 1
223.9	351	63	Fracture Rank 1
224.6	342	67	Fracture Rank 1
225.4	350	69	Fracture Rank 1
225.6	299	67	Fracture Rank 2
228.8	344	74	Fracture Rank 1
233.2	65	50	Fracture Rank 1
235.5	71	61	Fracture Rank 1
236.4	103	63	Fracture Rank 1
236.7	90	58	Fracture Rank 1
240.1	272	40	Fracture Rank 2
250.5	97	69	Fracture Rank 3
258.6	114	45	Fracture Rank 1
262.0	355	80	Fracture Rank 3
270.4	138	35	Fracture Rank 1
270.6	126	43	Fracture Rank 2
279.7	24	64	Fracture Rank 2
280.0	67	74	Fracture Rank 1
285.5	120	52	Fracture Rank 2
297.8	293	37	Fracture Rank 2
298.1	34	70	Fracture Rank 2
299.9	136	50	Fracture Rank 1
300.0	19	89	Fracture Rank 1

APPENDIX 5

INTEGRATED BOREHOLE LOGS

HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

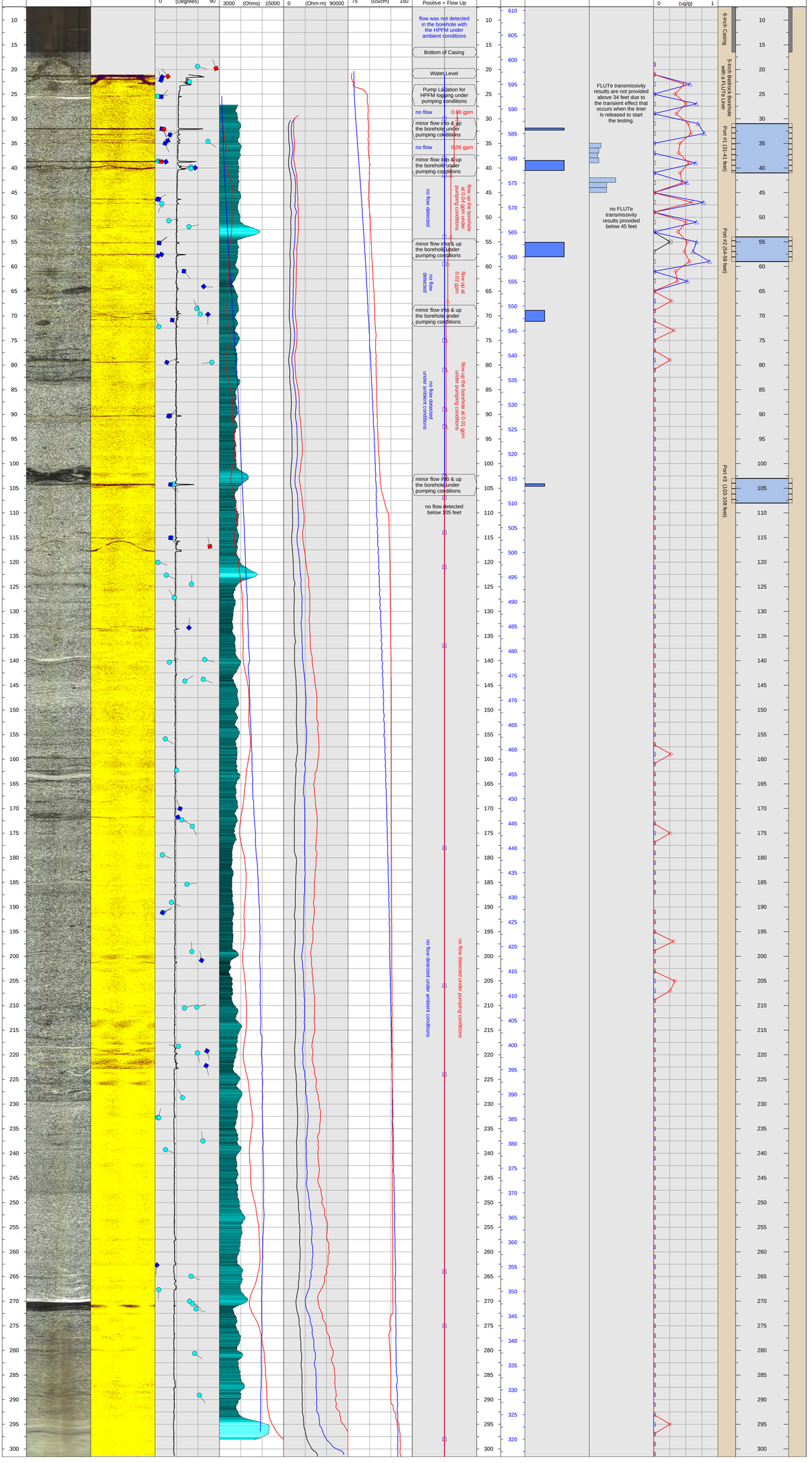
BR-001 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 618.06 Feet (NAVD88)	DATE(S) LOGGED:	July 6 & 7, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.0 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	20.8 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-001 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

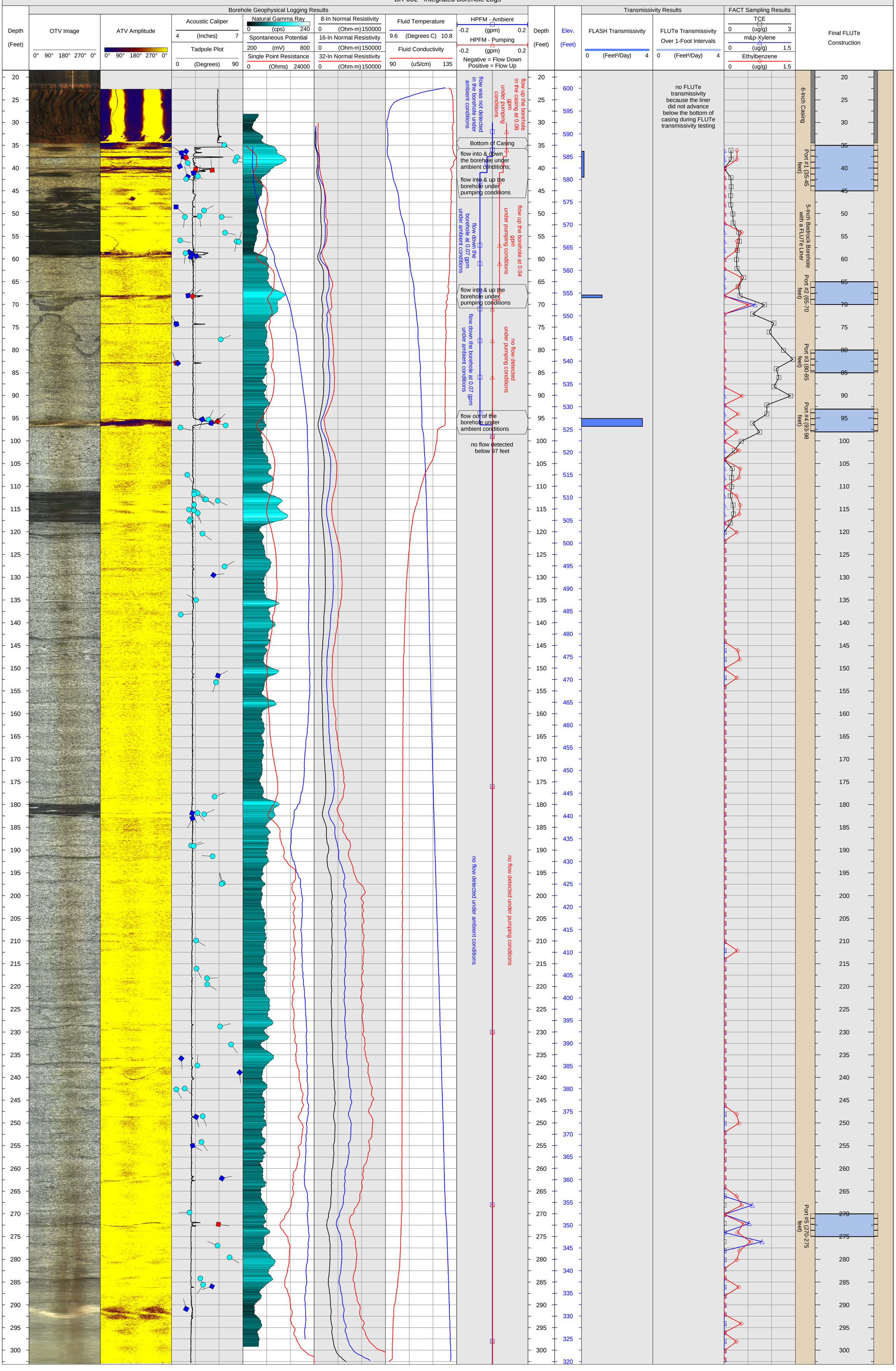
BR-002 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 622.48 Feet (NAVD88)	DATE(S) LOGGED:	July 6 & 7, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.1 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	22.5 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-002 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

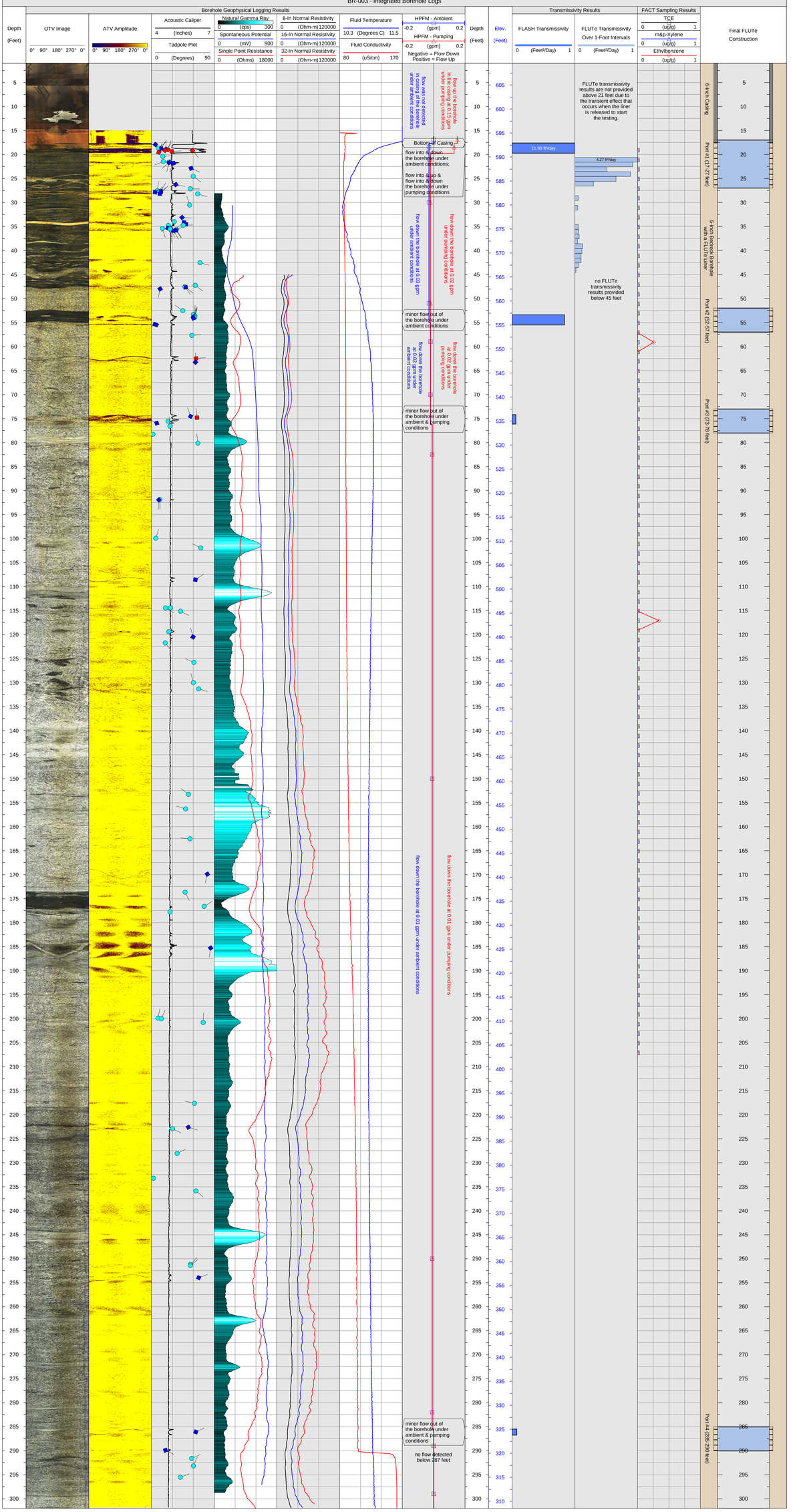
BR-003 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 610.53 Feet (NAVD88)	DATE(S) LOGGED:	July 7 & 8, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.1 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	15.0 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-003 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

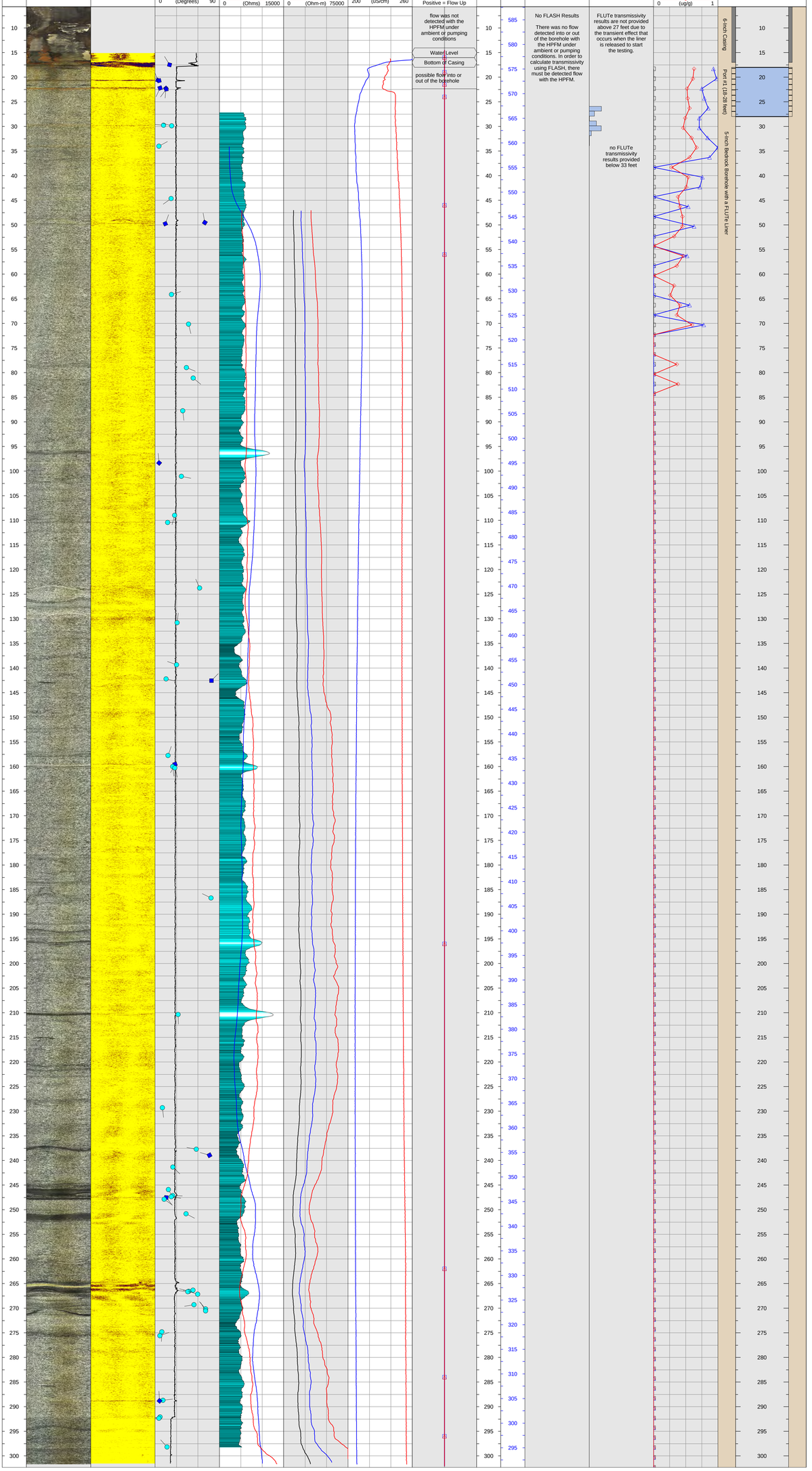
BR-004 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 593.32 Feet (NAVD88)	DATE(S) LOGGED:	July 6 & 7, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	2.3 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	15.1 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-004 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

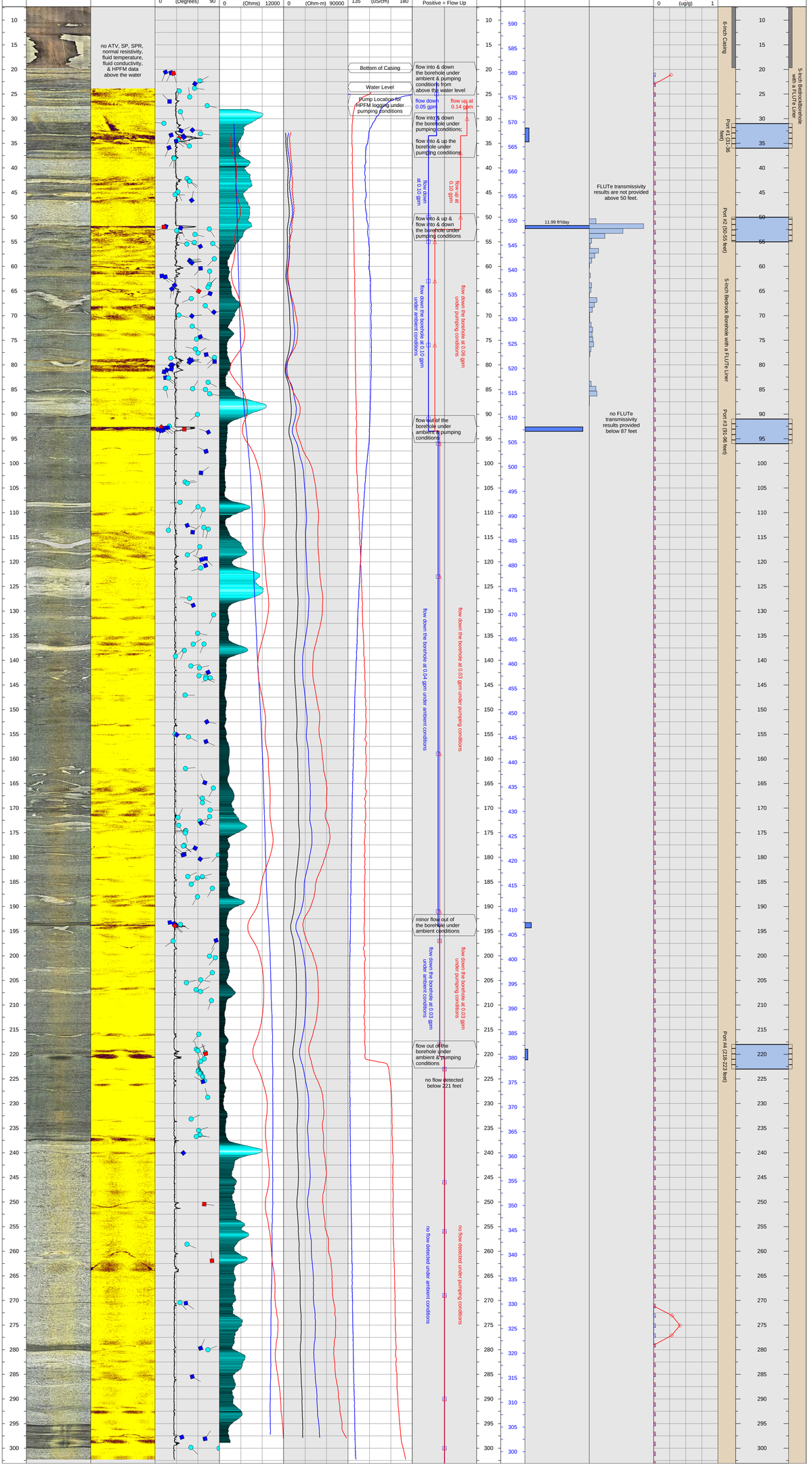
BR-005 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 600.71 Feet (NAVD88)	DATE(S) LOGGED:	July 7 & 8, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.1 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	24.3 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-005 - Integrated Borehole Logs



Appendix H

FACT Report (FLUTe)

FLUTe™ Flexible Liner Underground Technologies, LLC
PO Box 340, Alcalde, NM 87511

FACT Data Report
AECOM
Foster, Rhode Island

Prepared for:

Gregory Hencir
AECOM
250 Apollo Drive
Chelmsford, MA 01824, USA
978-905-2157

Prepared by:

Flexible Liner Underground Technologies
835 Nina Way
Warminster, PA 18974
215-394-5760

Date of Preparation:
9/21/2020

FLUTe

Field Procedures for U.S. Army Corps of Engineers site in Foster, RI

FLUTe was contracted by AECOM to install five, 5.5” diameter carrier blanks with FLUTe FACT covers in boreholes BR-001 through BR-005. The install of these liners occurred through 7/13/20 and 7/17/20. The removals and FACT sectioning was performed from 8/4/2020-8/10/2020.

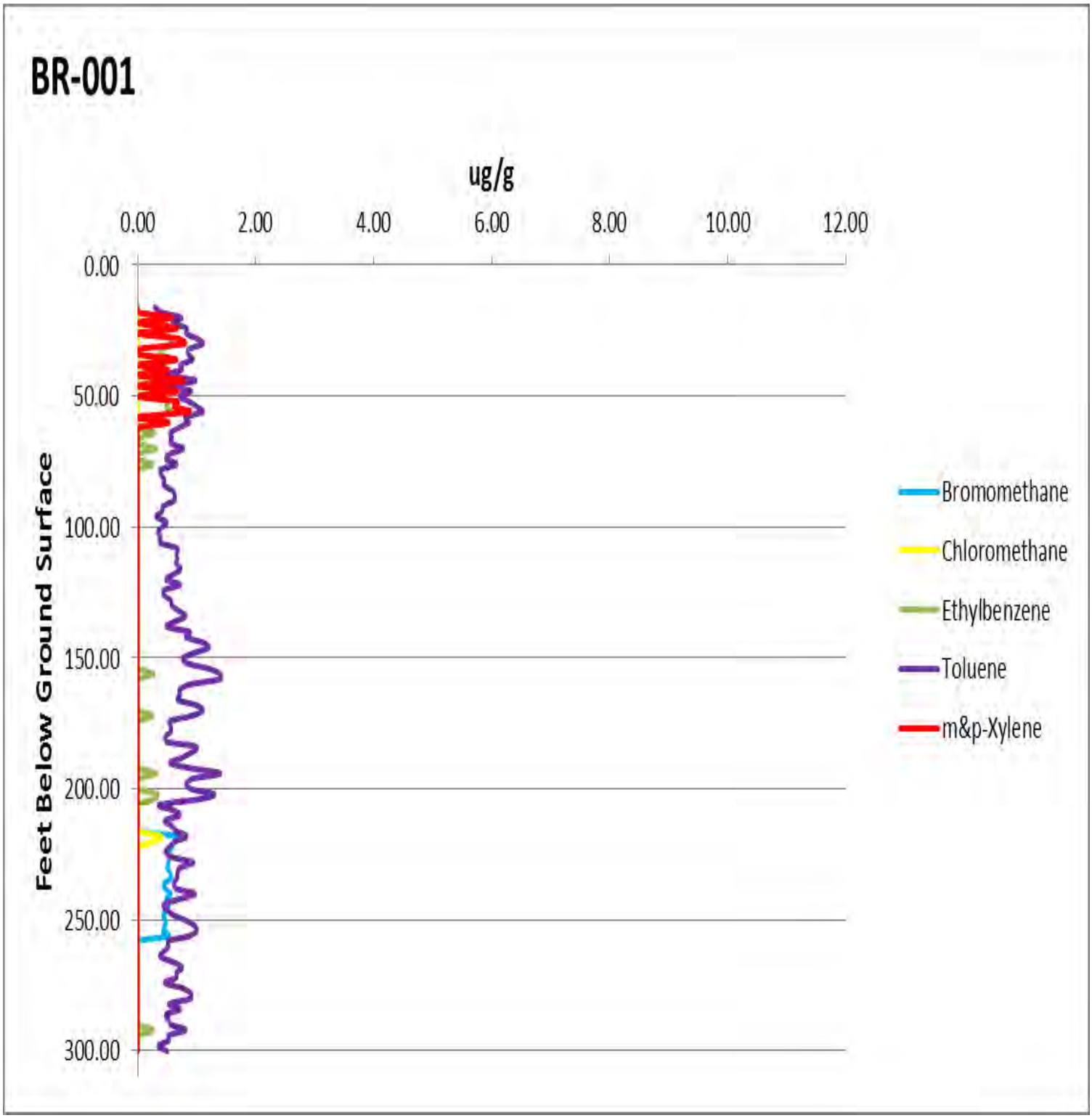
FACT Laboratory Results

The FLUTe FACT samples were sent to Pace Analytical in Greensburg, PA for analysis. The results are included in the attachments of this report. The graphs show the depth of the sample in the y-axis vs the concentrations of the analytes in the x-axis in the form of ug/g.

BR-001

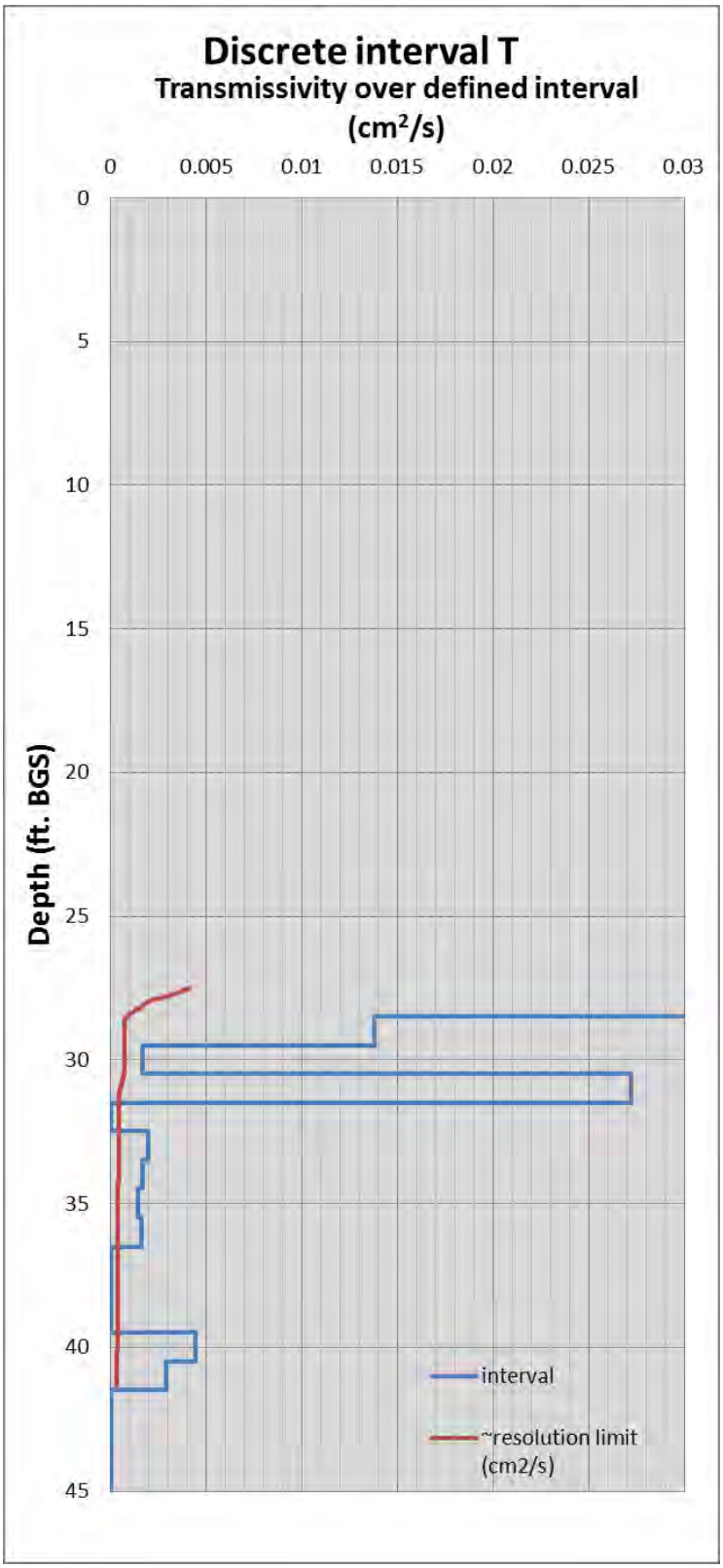
Date Installed: 7/13/20
Date removed, inspected, and sampled: 8/4/20
Length of time in borehole: 22 days
Depth to water from ground surface at time of installation: 18.6 FT
Casing Depth: 15.0 FT
Casing height above ground surface: 2.96 FT
Total depth of hole: 299.92 FT GS
Total depth of installation: 298.6 FT GS

FACT Results: BR-001



FLUTe

T Profile: BR-001

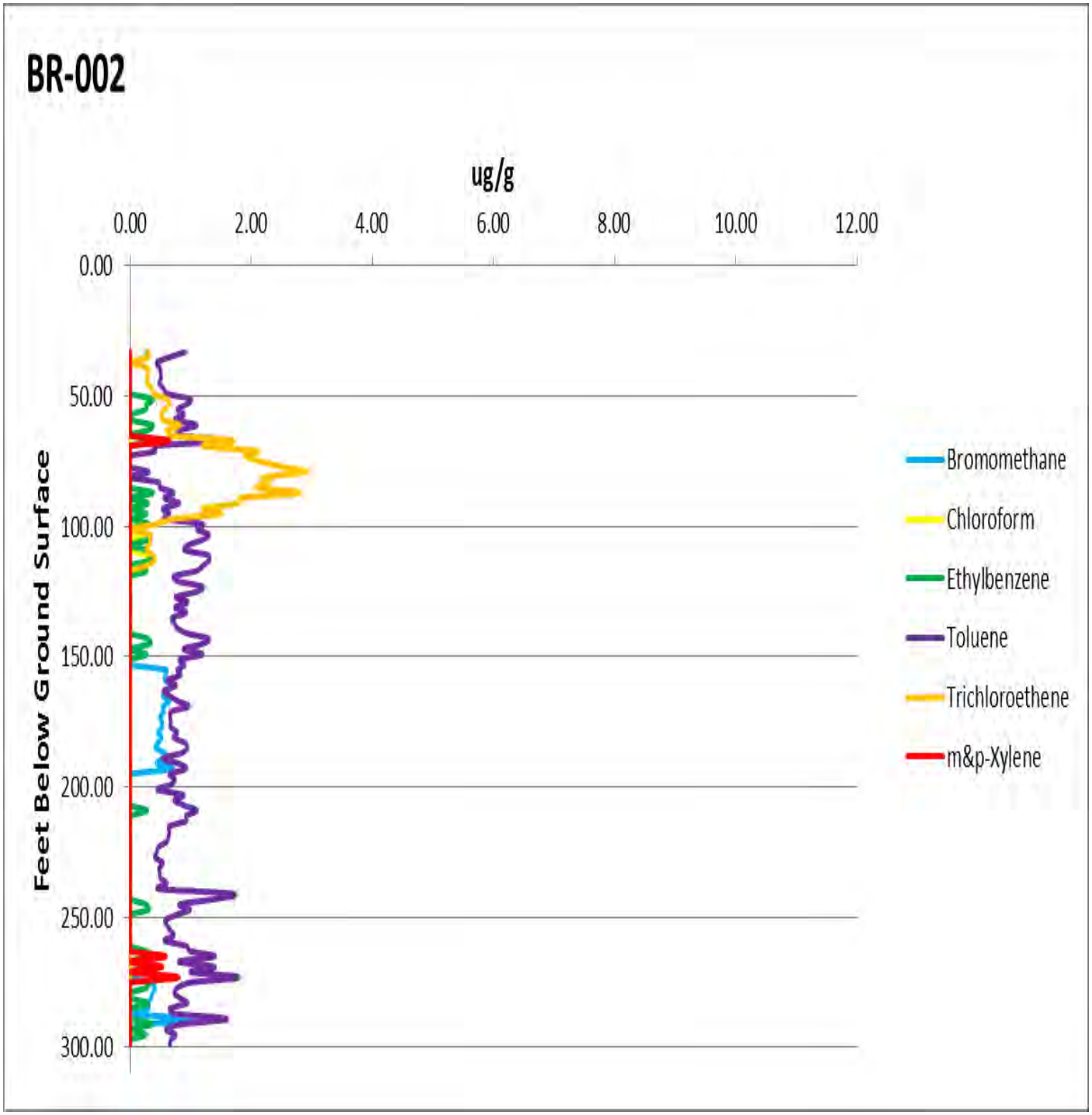


FLUTe

BR-002

Date Installed: 7/14/20
Date removed, inspected, and sampled: 8/5/20
Length of time in borehole: 22 days
Depth to water from ground surface at time of installation: 19.75 FT
Casing Depth: 32 FT
Casing height above ground surface: 3.0 FT
Total depth of hole: 300.75 FT GS
Total depth of installation: 298.1 FT GS

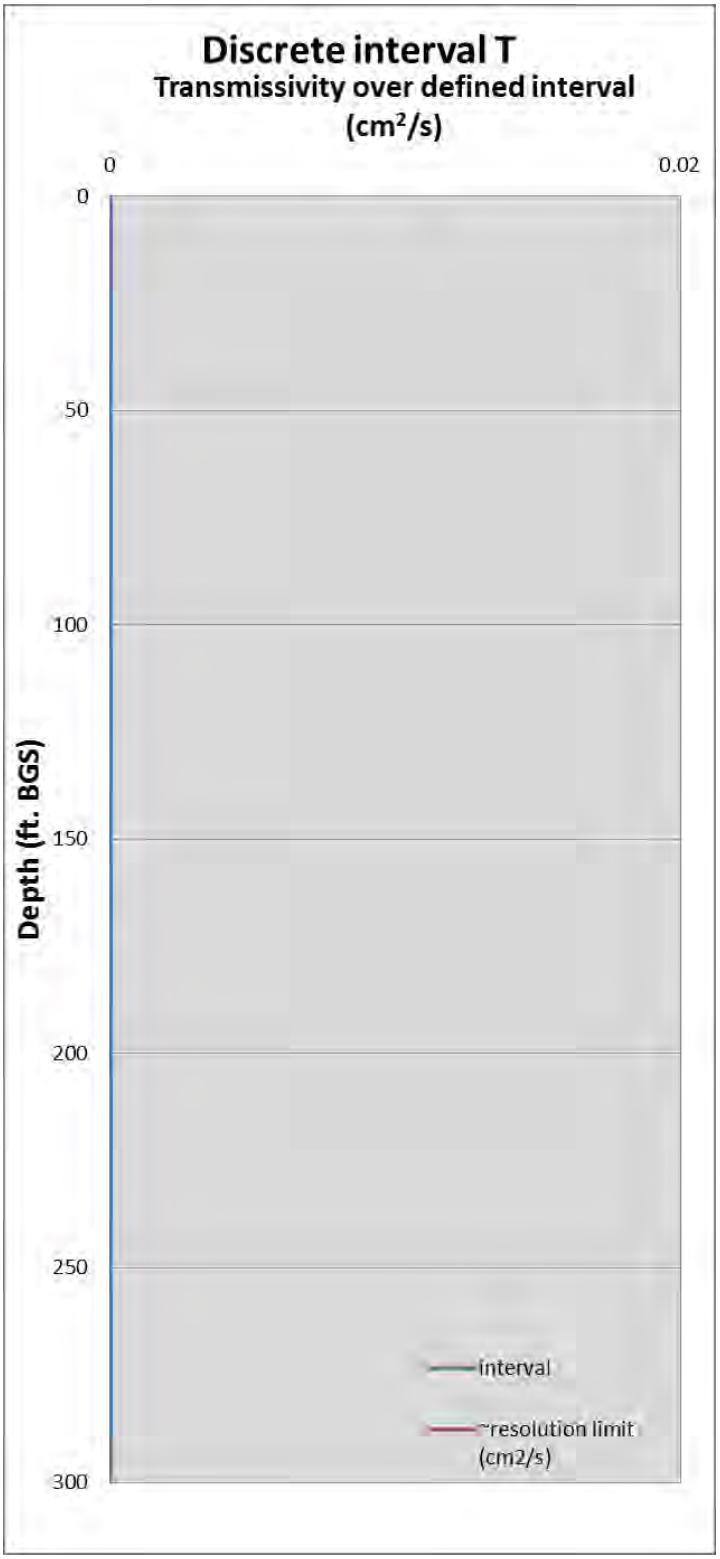
FACT Results: BR-002



FLUTe

T Profile: BR-002

****Note: The liner did not evert out of the casing during the profiling test.**

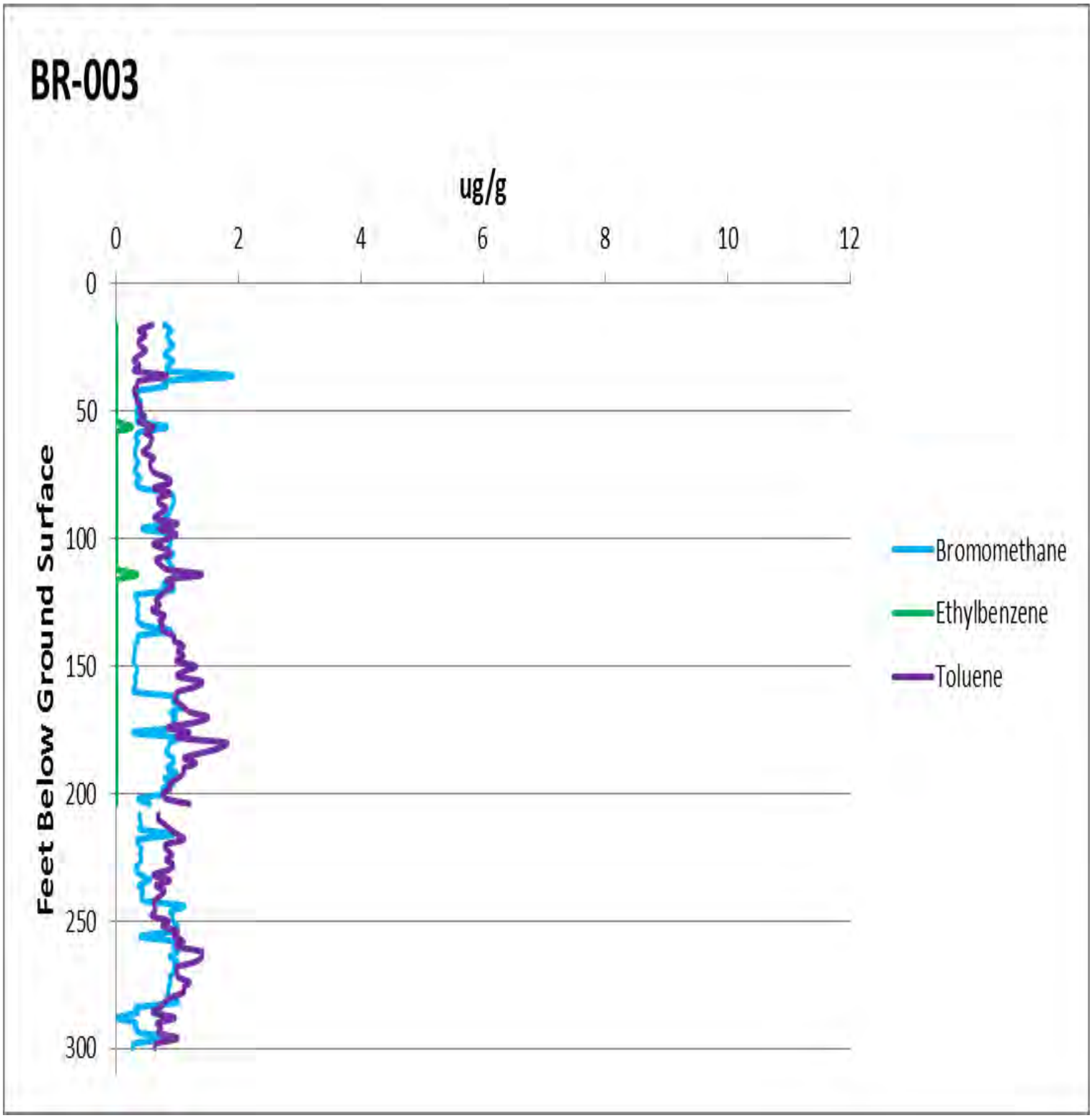


FLUTe

BR-003

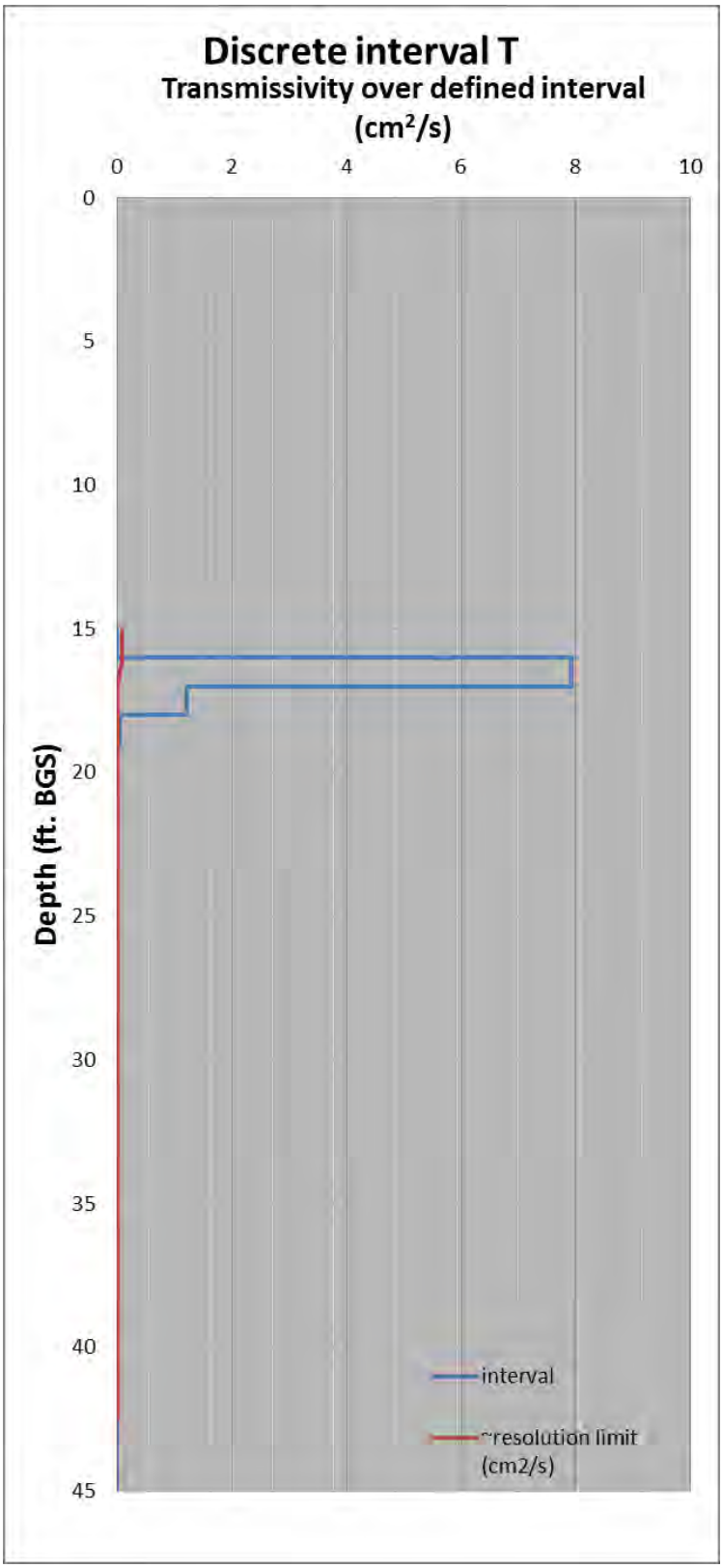
Date Installed: 7/15/20
Date removed, inspected, and sampled: 8/9/20
Length of time in borehole: 26 days
Depth to water from ground surface at time of installation: 12.25 FT
Casing Depth: 15.0 FT
Casing height above ground surface: 3.17 FT
Total depth of hole: 300.25 FT GS
Total depth of installation: 298.5 FT GS

FACT Results: BR-003



FLUTe

T Profile: BR-003

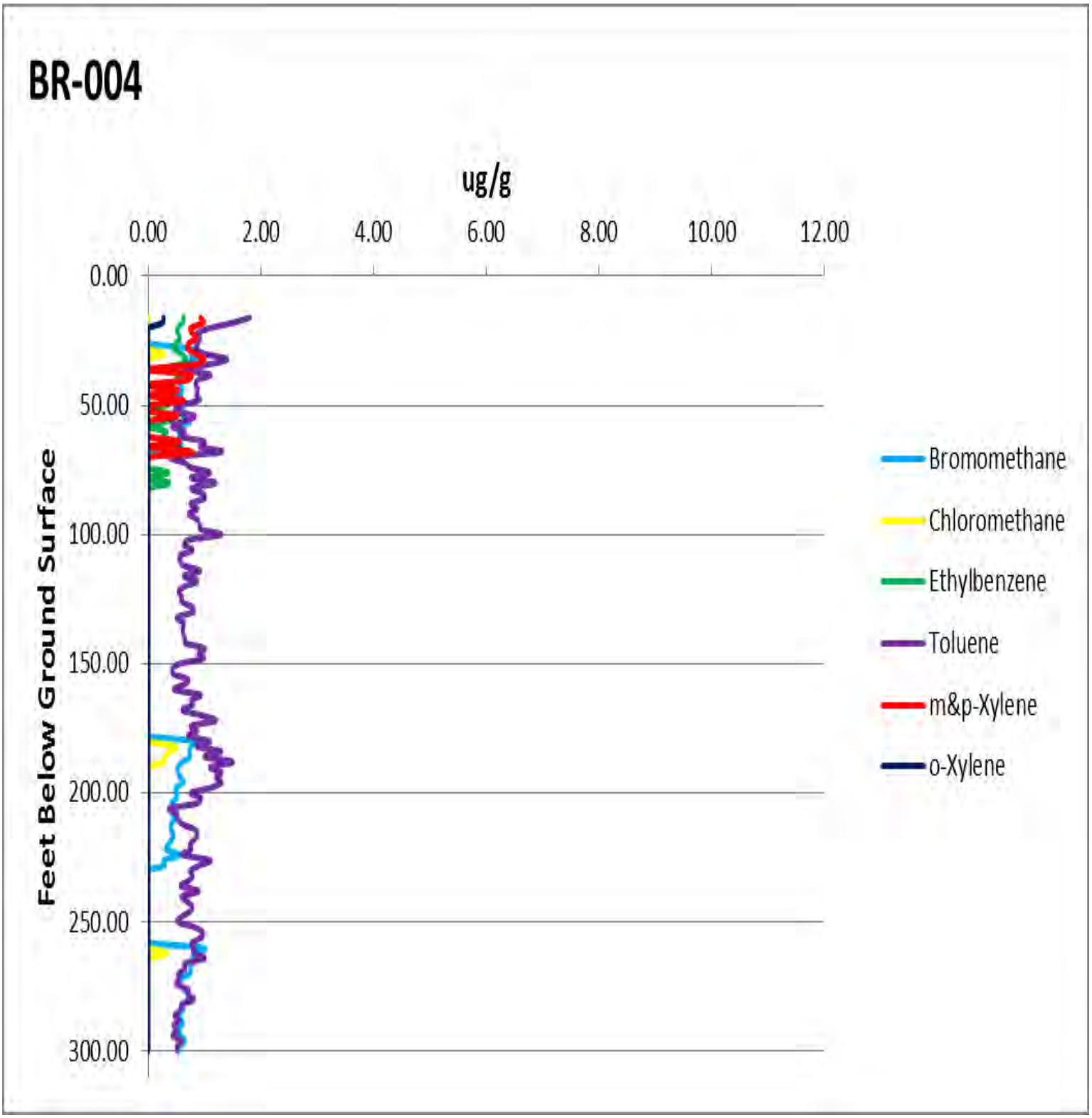


FLUTe

BR-004

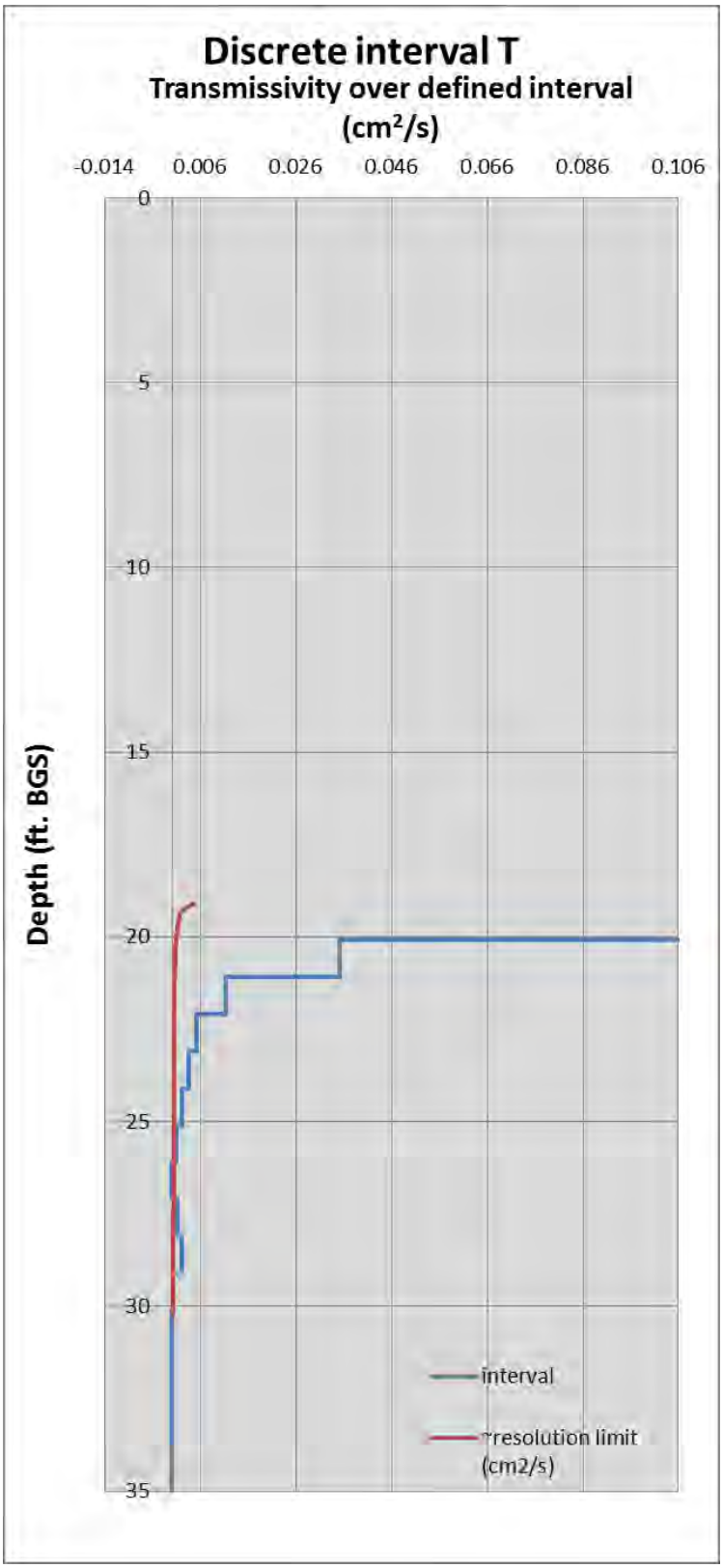
Date Installed: 7/15/20
Date removed, inspected, and sampled: 8/8/20
Length of time in borehole: 25 days
Depth to water from ground surface at time of installation: 13.92 FT
Casing Depth: 15.0 FT
Casing height above ground surface: 2.45 FT
Total depth of hole: 300.33 FT GS
Total depth of installation: 298.25 FT GS

FACT Results: BR-004



FLUTe

T Profile: BR-004

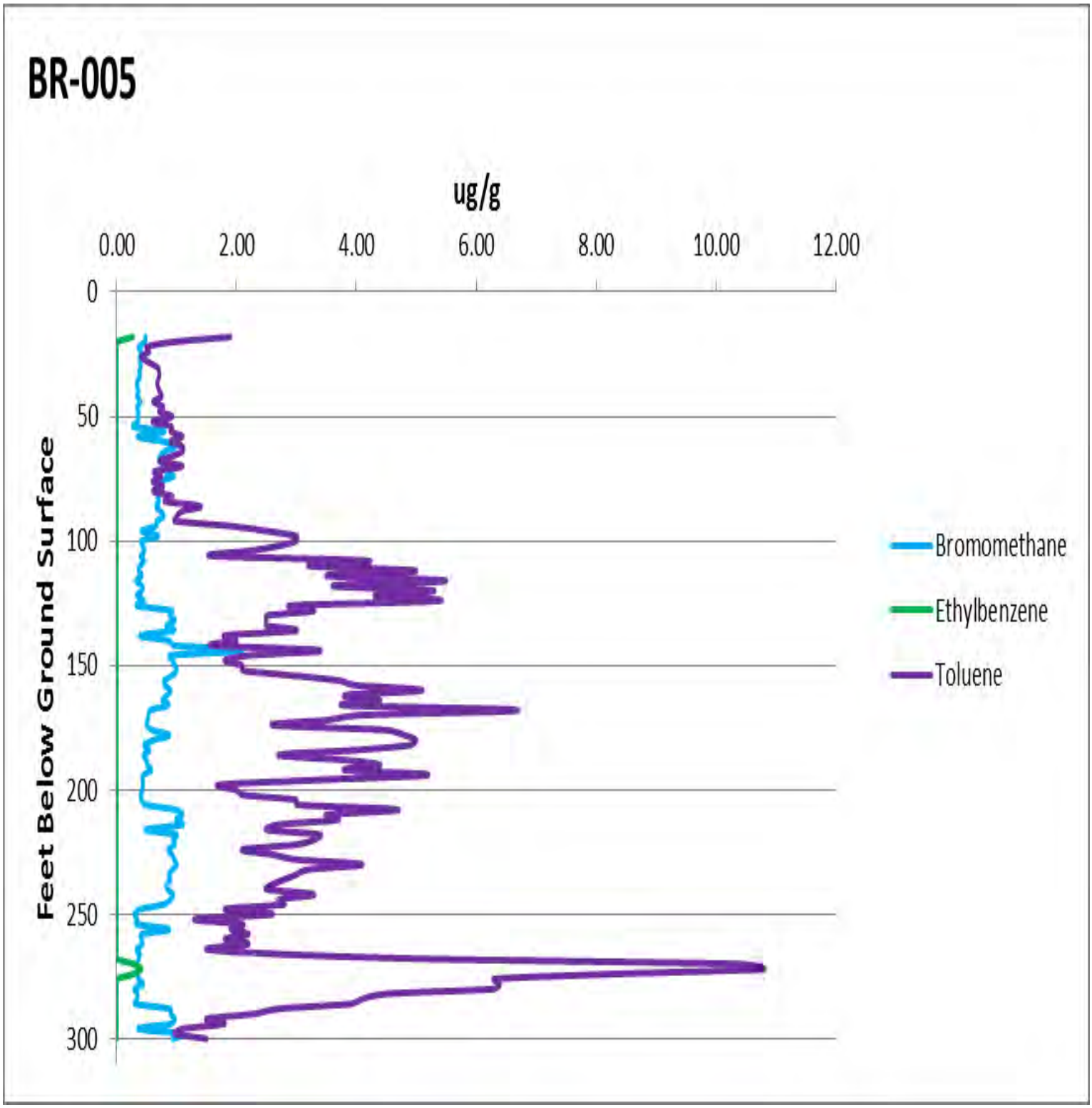


FLUTe

BR-005

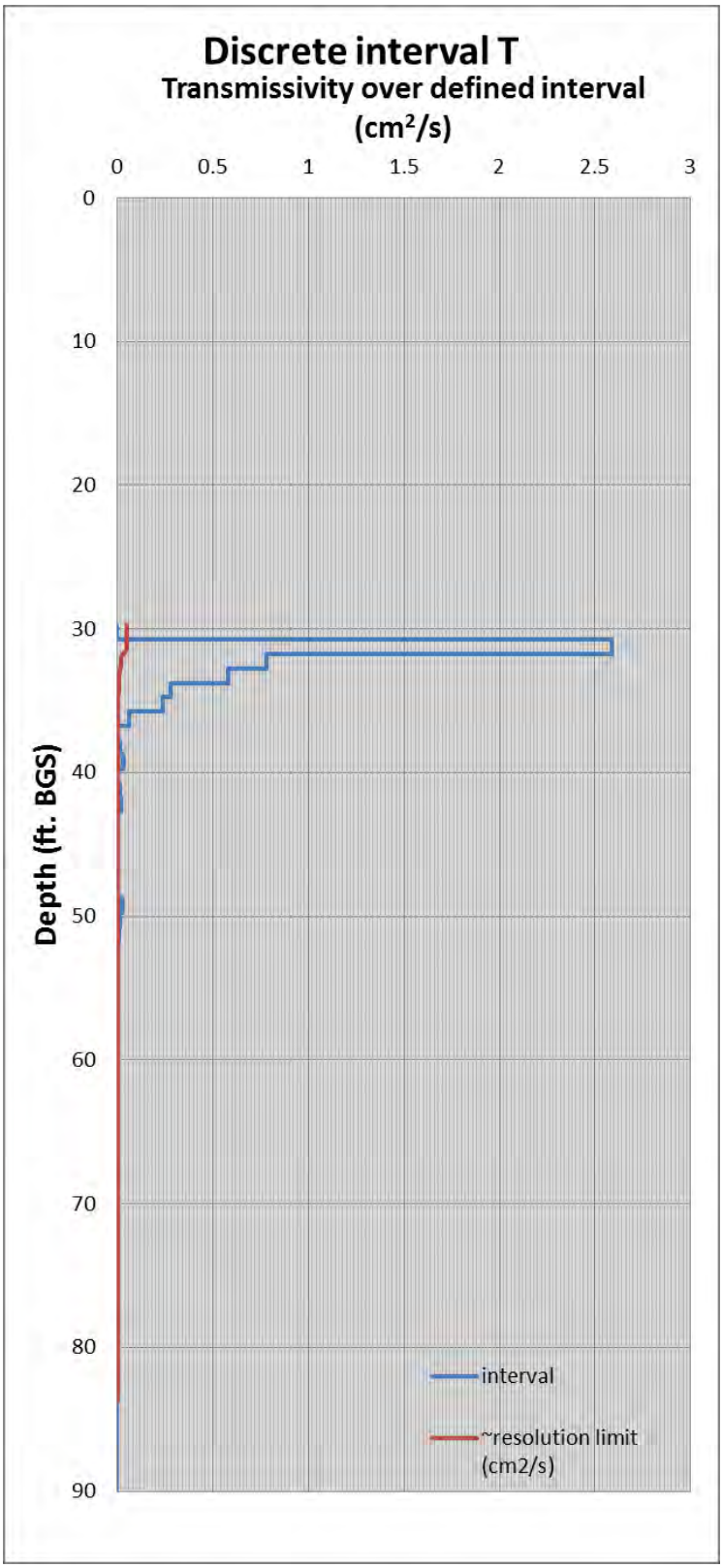
Date Installed: 7/16/20
Date removed, inspected, and sampled: 8/10/20
Length of time in borehole: 26 days
Depth to water from ground surface at time of installation: 22.08 FT
Casing Depth: 17.0 FT
Casing height above ground surface: 3.0 FT
Total depth of hole: 300.46 FT GS
Total depth of installation: 298.25 FT GS

FACT Results: BR-005



FLUTe

T Profile: BR-005



FLUTe

FLUTe Summary and Comments

The analytical results provided by Pace Analytical showed concentrations of toluene within a couple field blanks containing only the D.I water. Toluene is known to be in the liner material, but it was apparent that only wells BR-001 and BR-002 contained the analyte in the field blanks while the rest of the water samples were non-detect. With that in mind, the hope was that the toluene would help to identify the higher flow zones, but there does not seem to be any significantly active fractures with toluene peaks when comparing the profiling tests to the analyte graphs for each well. In such low flow holes as we noted with the liner removals and transmissivity profile, it is fair to assume that there is little flow below about 100 ft. Previous FACT results have shown good correlation of permeable zones and higher concentrations of contaminants with toluene. The conclusion is that there is little horizontal flow in these wells, which is not surprising in boreholes of such low transmissivity and we would suggest that toluene can be ignored for the reasons explained above.

Another comment can be made on the analyte bromomethane and its appearance in each well. Bromomethane is not known to be in the liner material; rather it has been seen in the FACT carbon itself. We would suggest that the bromomethane found in each well can be ignored as well.

We may attribute the concentrations of xylene found at deeper depths to the dye found in the liner's dye stripes. The only known source may be the vehicle in the dye of the dye stripes, but that should make it more ubiquitous.

The extremely slow removal of the liners, even with the aid of the long vent tube for the first half of the hole, is evidence of the low conductivity of the lower portion of these holes. The T profiles are typically terminated at a descent rate of 0.001ft/sec since a further measurement gains little advance in a reasonable time. Therefore the T profiles are here very limited in depth. It is useful to note that the limit of the heat pulse flow meter is about one sixth of that limit or the HPFM can measure one sixth slower flow than is practical with the T profile. However, the last flow zone could be far deeper than the T profile stop. It was noted that the indicated flow zones of the FLUTe measurement are at higher resolution in space, and match the apparent flow zones of the geophysics. For this reason, it is always useful to combine the FLUTe measurements and the geophysics data.

The T profile results do include the apparent aperture for the fracture flows measured at the locations of the measured flow zones which is not possible with the televiewer images. The calculated synthetic flow log for borehole no. 5 deduced from the RHP results and T profile is very similar to the HPFM, but is somewhat also obscured by the transient. The comparison of the synthetic flow log from the more detailed FLUTe data with that of the geophysics is a useful test of the validity of the two data sets. Whereas the HPFM is useful at very low flow rates, it can not measure the high flow rates of the T profile.

The extremely high flow at the beginning of each T profile is most likely due to the transient. The transient occurs when the liner is released to start the profile and produces a nearly infinite initial radial outward gradient throughout the borehole leading to an immediate high flow. Whereas the transient gradient correction was applied, it does not affect the first few feet of the profile. Since this is a flow affect throughout the borehole, it can not be applied to a particular interval or be related to any particular fracture. Shortly after the transient has decayed the borehole approaches a nominal steady state throughout the borehole. The entire data reduction is based on the assumption of a steady state flow. That is the assumption of the Thiem equation as it is also used in straddle packer testing which sees the same transient. Therefore, the initial transient produces a spurious high flow when assuming a steady state flow for the data reduction. Since the liner travels in time past that effect, it can not be related to flow into the hole wall at the time of the transient. The advantage of the transient correction is that it sometimes allows the identification of step changes

during the transient that are otherwise not to be identified. To avoid the confusion, it is best to just crop the first huge velocity change due to the decay of the transient. That is why we have noted that the high flow just below the start of the profile is probably due to the transient. A better comment would be that the initial high flow is due to the transient and should be ignored. Theoretically, the transient never completely stops and is prolonged in very low flow zones slow to reach steady state, but there it is below our resolution and not important. It is always best if the transient has decayed in the casing, but that is only possible if the water table is in the casing.

For additional information regarding Transmissivity Profile and FACT results, please contact the following:

Carl Keller

Principle Scientist
Flexible Liner Underground Technologies
1091 State Rd 68
Velarde, NM 87582
(P) 505-852-0128 / (M) 505-930-1154 carl@flut.com

Ian Sharp

Chief of Fielding Operations
Flexible Liner Underground Technologies
2412 Princeton Drive NE Suite B
Albuquerque, NM 87107
(P) 505-883-4032 / (M) 505-720-8429 ian@flut.com

Daniel Schramm

East Coast Field Manager
Flexible Liner Underground Technologies
835 Nina Way
Warminster, PA 18974
(P) 215-394-5760 / (M) 215-847-0049 dan@flut.com

Additional Attachments

Please see Transmissivity and Reverse Head Profile results for additional information.

Appendix I

Integrated Borehole Logs

HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

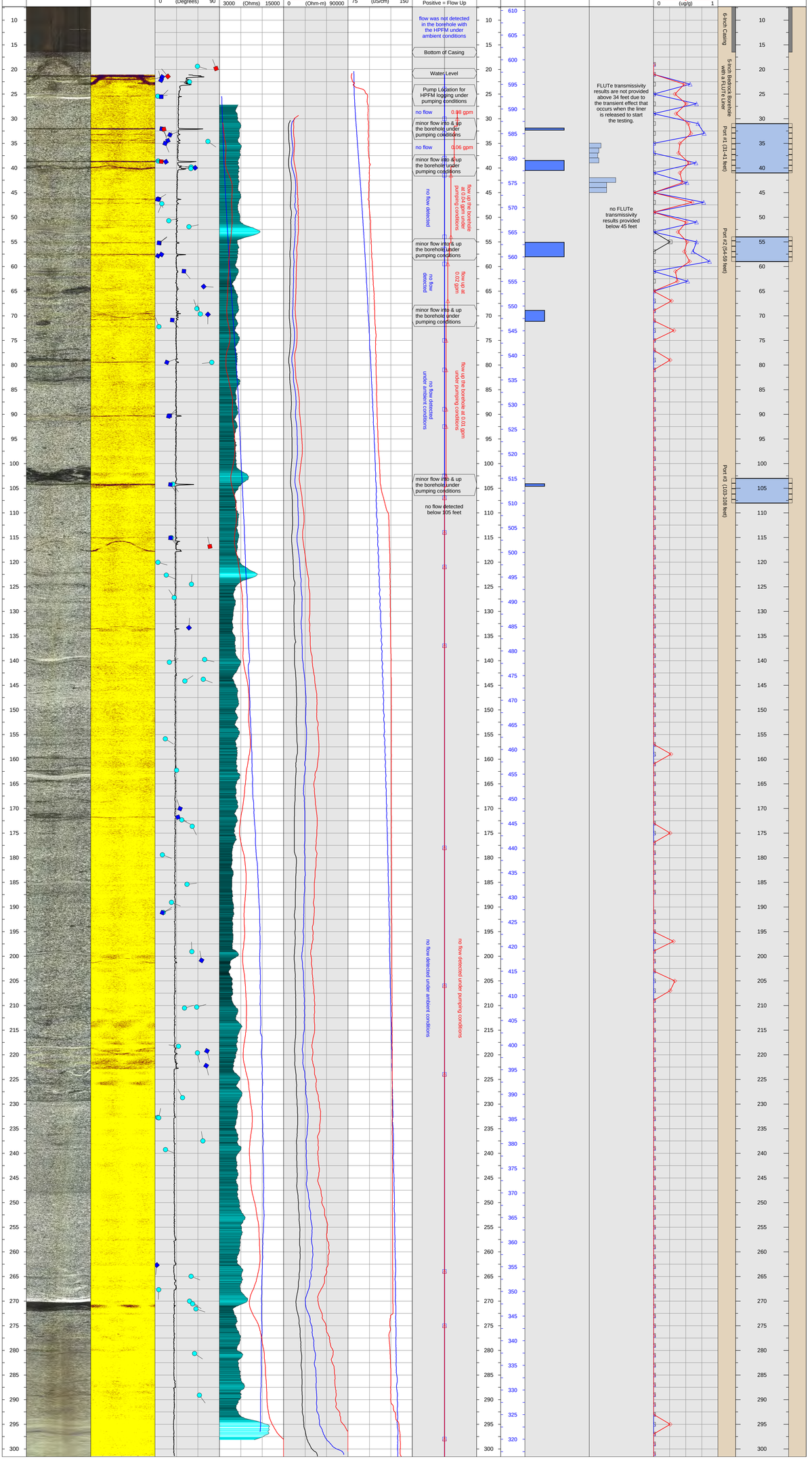
BR-001 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 618.06 Feet (NAVD88)	DATE(S) LOGGED:	July 6 & 7, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.0 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	20.8 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-001 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

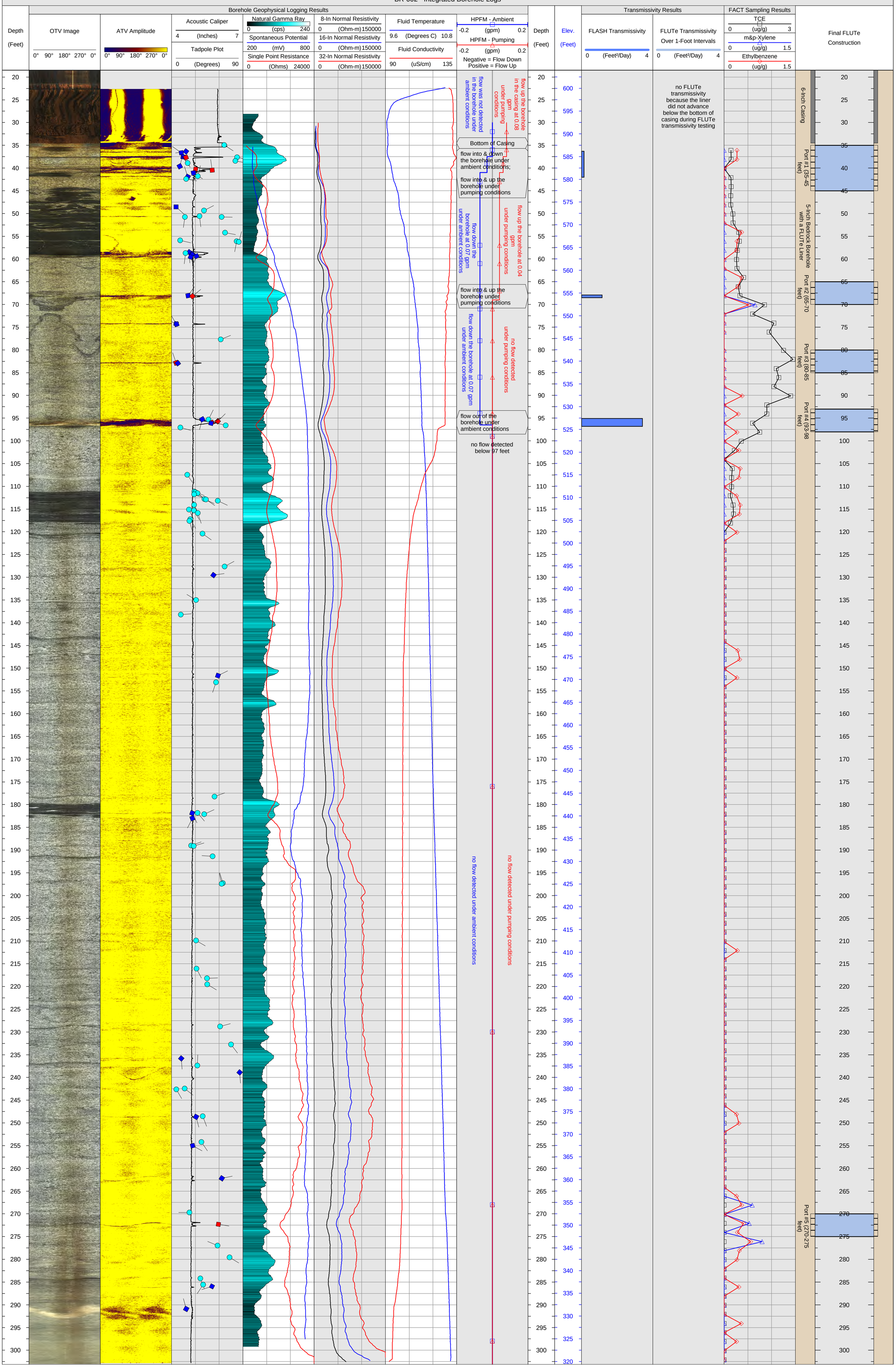
BR-002 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 622.48 Feet (NAVD88)	DATE(S) LOGGED:	July 6 & 7, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.1 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	22.5 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-002 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

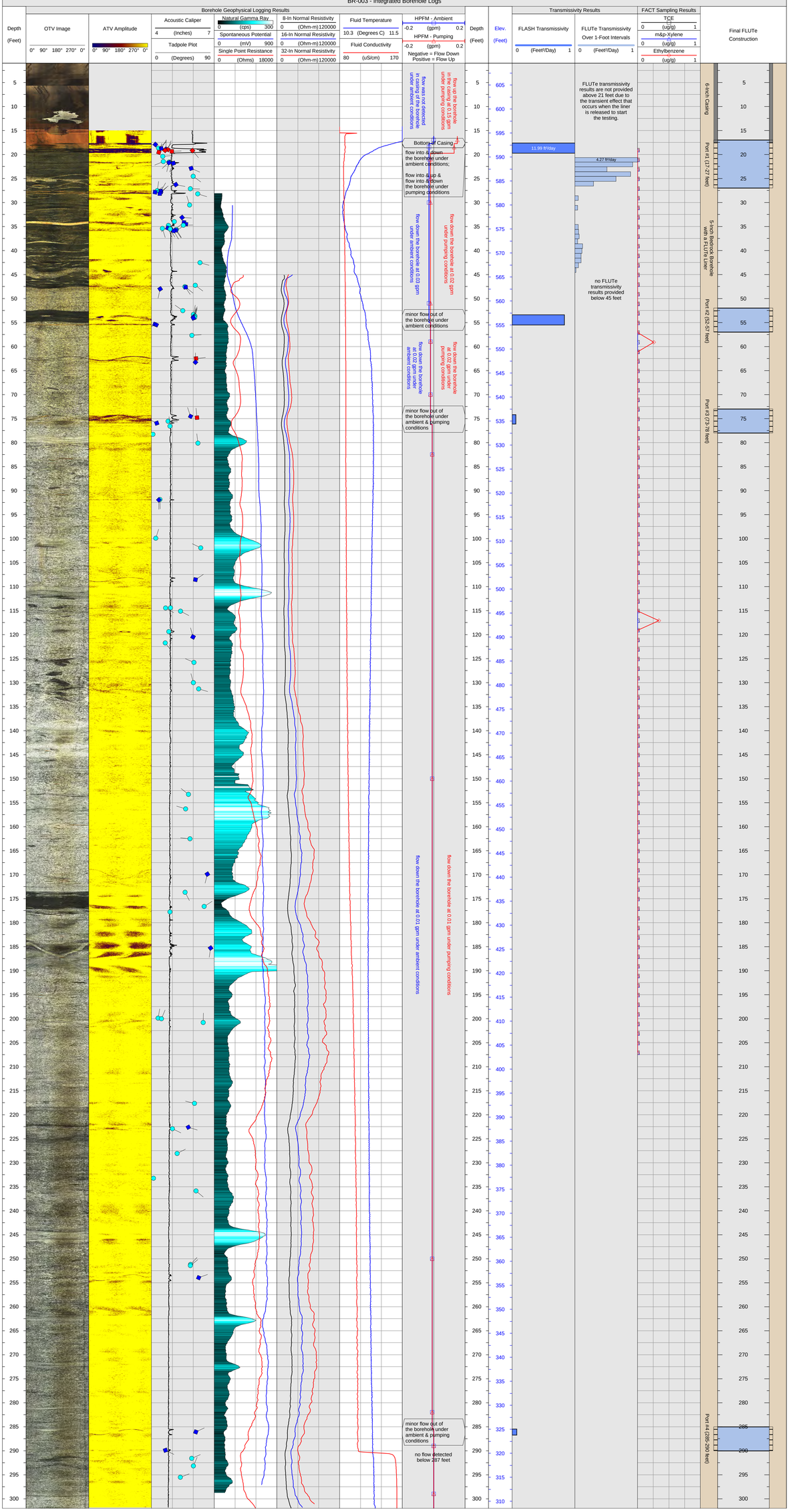
BR-003 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 610.53 Feet (NAVD88)	DATE(S) LOGGED:	July 7 & 8, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.1 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	15.0 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-003 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

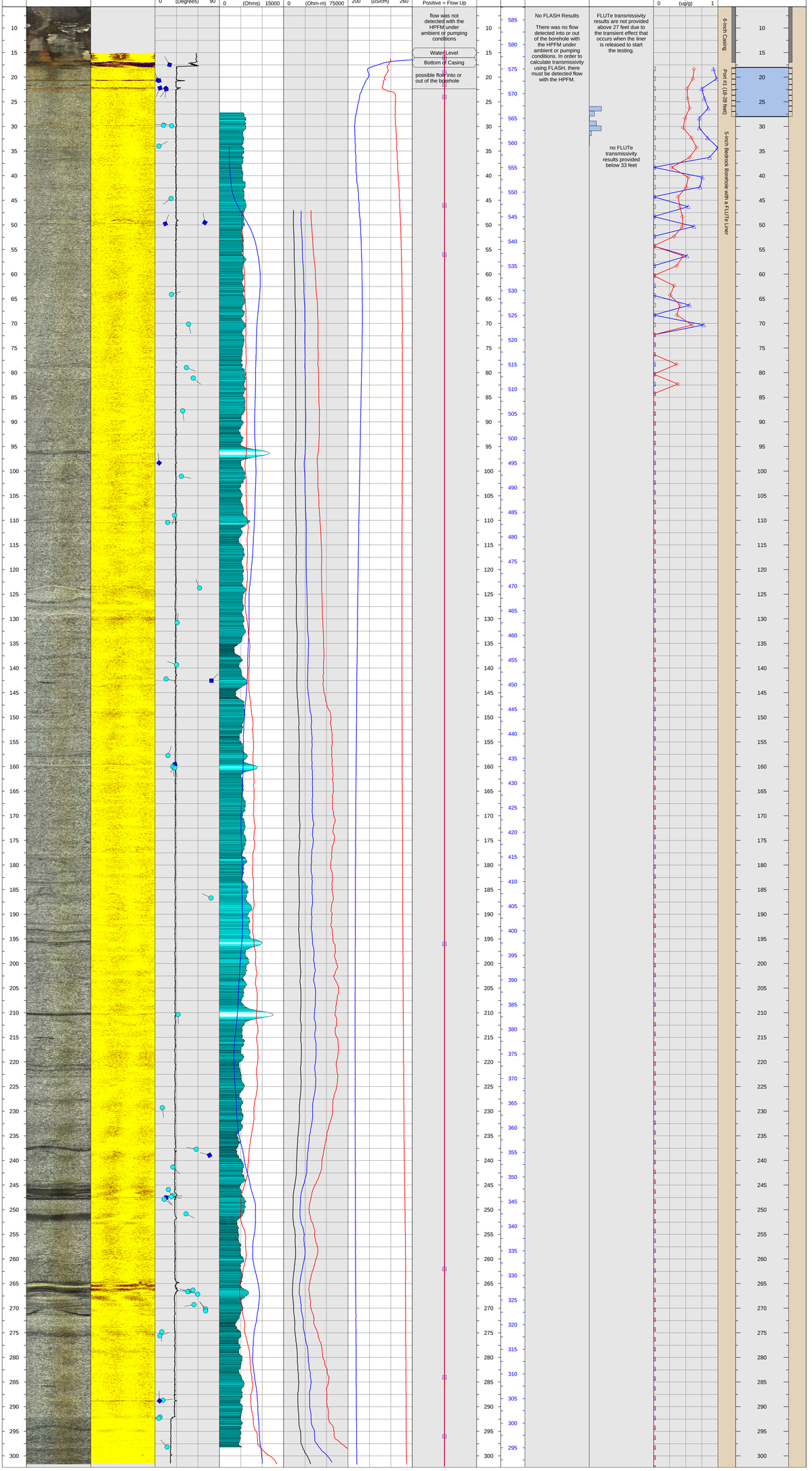
BR-004 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 593.32 Feet (NAVD88)	DATE(S) LOGGED:	July 6 & 7, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	2.3 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	15.1 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-004 - Integrated Borehole Logs



HAGER-RICHTER GEOSCIENCE, INC.

Salem, New Hampshire
Tel: 603.893.9944

Fords, New Jersey
Tel: 732.661.0555

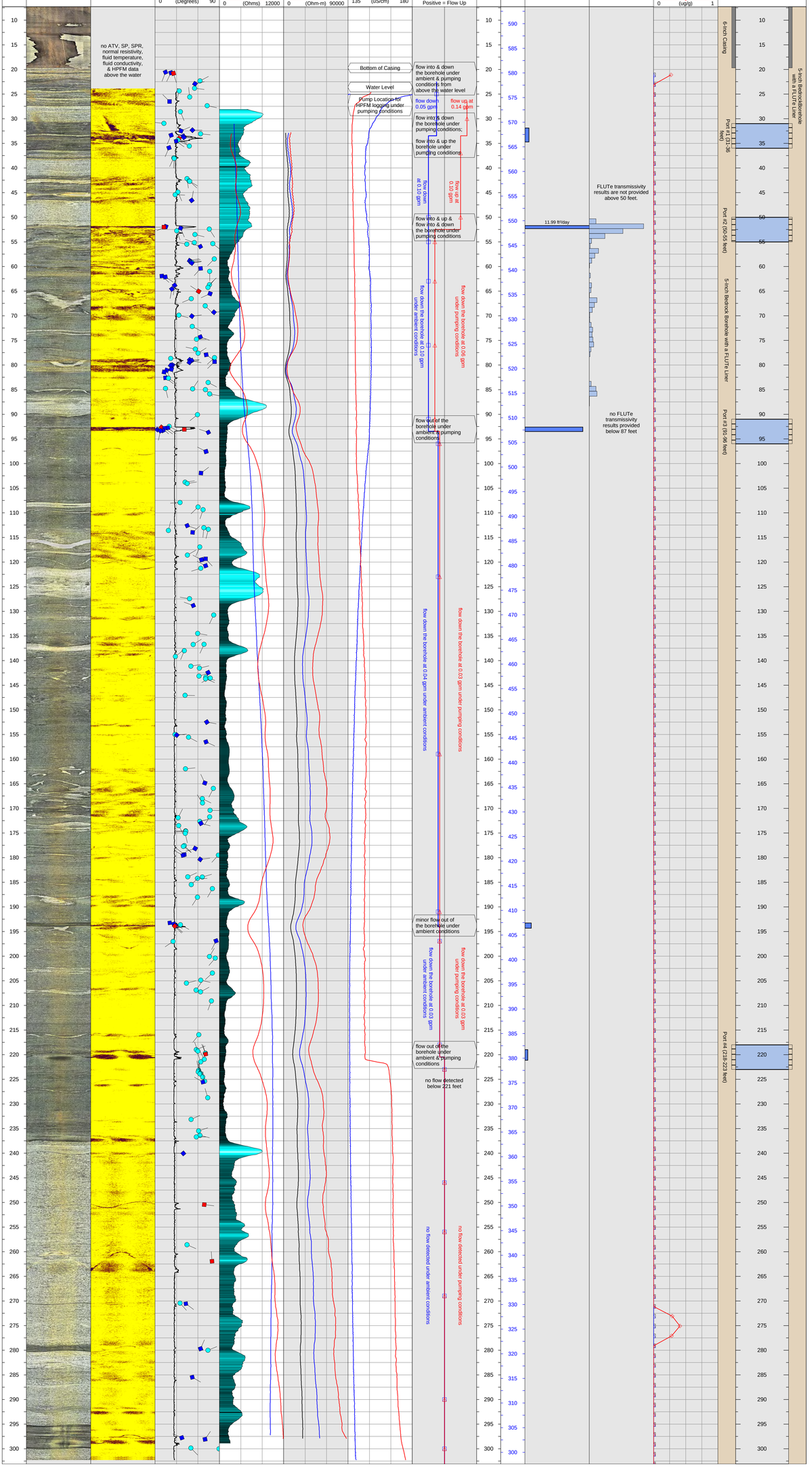
BR-005 - INTEGRATED BOREHOLE LOGS

CLIENT:	AECOM	LOG DATUM:	Top of 6-Inch Steel Casing at Elev. 600.71 Feet (NAVD88)	DATE(S) LOGGED:	July 7 & 8, 2020
PROJECT:	Former NIKE PR-79 Control Area	TOP OF CASING:	3.1 Feet Above the Ground Surface	LOGGING GEOPHYSICIST(S):	Robert Garfield, P.G. & Nick DeCristofaro
LOCATION:	Foster, Rhode Island	ORIENTATION REFERENCE:	True North (Magnetic Declination = 14.0° West)	PROJECT REP(S) ON-SITE	John Shannon
HRGS FILE:	19RG14	WATER LEVEL DEPTH:	24.3 Feet	LOGS PROCESSED BY:	Robert Garfield, P.G. & Nick DeCristofaro

STRUCTURE LEGEND: Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: At the time of the borehole geophysical logging, the borehole was an open bedrock borehole below the bottom of the 6-inch steel casing.
The FLASH Transmissivity Results, FLUTe Transmissivity Results, and FACT Sampling Results were provided by AECOM and presented herein by HRGS.

BR-005 - Integrated Borehole Logs



Appendix J

Total Coliform Test Results

New England Testing Laboratory, Inc.
(401) 353-3420

Certificate of Analysis

Prepared For:

Dependable Pump Repair
111 Robinson Street
Wakefield, RI 02879

Date Reported: 3/1/2021
Reference: Laboratory Work Order Number: 1B22047

Enclosed are the results for the sample(s) received on 22-February-2021.

Please contact us if you have any questions.

Mike Mccallum, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill St.
West Warwick, RI 02893
mike.mccallum@newenglandtesting.com

www.newenglandtesting.com

This report of analytical results pertains only to the sample(s) provided to us by the client on the date indicated above. We assume no responsibility for discrepancies in the analytical attributes of the identified source and the submitted sample caused by improper sampling, misrepresentation of sample identity, changes in source quality or other circumstances beyond our control.

These results have been obtained through testing the submitted sample for the parameters listed above in accordance with accepted practices in environmental bacteriology and/or analytical chemistry. This warranty is in lieu of all other warranties, either expressed or implied.

Laboratory licenses/certifications:
RI: LAI00351, MA: M-RI010, NY: 11673, CT: PH-0740, NH: 2033

Samples Submitted 2/22/2021 3:44:00PM

Work order: 1B22047

Sample: 23A Theodore Foster Drive, Foster, RI (Nike 1)

Laboratory Number	Date and Time Sampled	Sample Matrix
1B22047-01	2/22/2021 1:15:00PM	Drinking water

Request for Analysis

(Work order 1B22047)

Sample: 23A Theodore Foster Drive, Foster, RI (Nike 1)

Analysis	Method
Total Coliform and E. coli bacteria	SM9223B(04) (Colilert 18)

Method References: *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, APHA, AWWA-WPCF.*Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water*, USEPA/EMSL.

Analytical Results

(Work order: 1B22047)

Sample: **23A Theodore Foster Drive, Foster, RI (Nike 1)**

Category: Microbiology

Parameter	Result	Units	Detection Limit*	Recommended maximum
Total Coliform and E. Coli	Absent	P/A	1.00	Must be Absent

Abbreviations: ND = Not Detected
**The Detection Limit is the lowest concentration can be measured.*

1 B 2 2047

NETL

PRIVATE PARTY SAMPLE CUSTODY SHEET

Name and Mailing address for report (Please Print):
DePendable Pump Repair
111 Robinson St
Wakefield, RI. 02879-3509

Telephone # (401) 233-2393

Email Address: Sfmitchell67@gmail.com

Sample Collected From (Address)
23 A Theodore Foster Dr (Nine 1)
Foster, RI.

What Date was the sample collected? 02/22/21
What Time was the sample collected? 1:15 P.

Is this Sample: Well Water ☐ Town Water ☒ Soil ☐ Other ☐

What tests are being requested?

Total Coliform Bacteria / E. coli (X)
Basic Series ( )
Rhode Island Series ( )
Complete Series ( )
Comprehensive Series ( )
Enterococci ( )

Other (list) ( )

I certify that I have collected the submitted sample from the location listed above according to the instructions provided. I understand that New England Testing Laboratory is responsible only for conducting the tests I request on the sample I submitted and reporting those results to me.

x Stephen F. Mitchell

FOR LAB USE ONLY:

Received by Olivia Jones at Temp _____ °C
PAYMENT: CASH ( ); CARD (✓); CHECK ( ) – CHECK # _____ AMOUNT 35.00

OL

New England Testing Laboratory, Inc.
(401) 353-3420

Certificate of Analysis

Prepared For:

Dependable Pump Repair
111 Robinson St.
Wakefield, RI 02879

Date Reported: 3/1/2021
Reference: Laboratory Work Order Number: 1B22048

Enclosed are the results for the sample(s) received on 22-February-2021.

Please contact us if you have any questions.

Mike Mccallum, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill St.
West Warwick, RI 02893
mike.mccallum@newenglandtesting.com

www.newenglandtesting.com

This report of analytical results pertains only to the sample(s) provided to us by the client on the date indicated above. We assume no responsibility for discrepancies in the analytical attributes of the identified source and the submitted sample caused by improper sampling, misrepresentation of sample identity, changes in source quality or other circumstances beyond our control.

These results have been obtained through testing the submitted sample for the parameters listed above in accordance with accepted practices in environmental bacteriology and/or analytical chemistry. This warranty is in lieu of all other warranties, either expressed or implied.

Laboratory licenses/certifications:
RI: LAI00351, MA: M-RI010, NY: 11673, CT: PH-0740, NH: 2033

Samples Submitted 2/22/2021 3:45:00PM

Work order: 1B22048

Sample: 23A Theodore Foster Drive, Foster, RI (Nike 2)

Laboratory Number	Date and Time Sampled	Sample Matrix
1B22048-01	2/22/2021 1:48:00PM	Drinking water

Request for Analysis

(Work order 1B22048)

Sample: 23A Theodore Foster Drive, Foster, RI (Nike 2)

Analysis	Method
Total Coliform and E. coli bacteria	SM9223B(04) (Colilert 18)

Method References: *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, APHA, AWWA-WPCF.*Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water*, USEPA/EMSL.

Analytical Results

(Work order: 1B22048)

Sample: **23A Theodore Foster Drive, Foster, RI (Nike 2)**

Category: Microbiology

Parameter	Result	Units	Detection Limit*	Recommended maximum
Total Coliform and E. Coli	Absent	P/A	1.00	Must be Absent

Abbreviations: ND = Not Detected
**The Detection Limit is the lowest concentration can be measured.*

1 B 2 2048

NELTI

PRIVATE PARTY SAMPLE CUSTODY SHEET

Name and Mailing address for report (Please Print):
Dependable pump Repair
111 Robinson St
Wakefield, RI. 02879-3509

Telephone # (401) 233-2393

Email Address: sfmitchell67@gmail.com

Sample Collected From (Address)
23 A Theodore Foster Dr (Nine 2)
Foster, RI.

What Date was the sample collected? 02/22/21
What Time was the sample collected? 1:48 pm

Is this Sample: Well Water [X] Town Water [ ] Soil [ ] Other [ ]

What tests are being requested?

Total Coliform Bacteria / E. coli (X)
Basic Series ( )
Rhode Island Series ( )
Complete Series ( )
Comprehensive Series ( )
Enterococci ( )

Other (list) ( )

I certify that I have collected the submitted sample from the location listed above according to the instructions provided. I understand that New England Testing Laboratory is responsible only for conducting the tests I request on the sample I submitted and reporting those results to me.

x Stephen F. Mitchell

FOR LAB USE ONLY:

Received by [signature] at Temp _____ °C
PAYMENT: CASH ( ); CARD (X); CHECK ( ) – CHECK # _____ AMOUNT 35.00

OL

New England Testing Laboratory, Inc.
(401) 353-3420

Certificate of Analysis

Prepared For:

Dependable Pump Repair
111 Robinson St.
Wakefield, RI 02879

Date Reported: 3/1/2021
Reference: Laboratory Work Order Number: 1B22049

Enclosed are the results for the sample(s) received on 22-February-2021.

Please contact us if you have any questions.

Mike Mccallum, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill St.
West Warwick, RI 02893
mike.mccallum@newenglandtesting.com

www.newenglandtesting.com

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These results have been obtained through testing the submitted sample for the parameters listed above in accordance with accepted practices in environmental bacteriology and/or analytical chemistry. This warranty is in lieu of all other warranties, either expressed or implied.

Laboratory licenses/certifications:
RI: LAI00351, MA: M-RI010, NY: 11673, CT: PH-0740, NH: 2033

Samples Submitted 2/22/2021 3:47:00PM

Work order: 1B22049

Sample: 23 Theodore Foster Drive, Foster, RI 02857 (Rou 1)

Laboratory Number	Date and Time Sampled	Sample Matrix
1B22049-01	2/22/2021 2:03:00PM	Drinking water

Request for Analysis

(Work order 1B22049)

Sample: 23 Theodore Foster Drive, Foster, RI 02857 (Rou 1)

Analysis	Method
Total Coliform and E. coli bacteria	SM9223B(04) (Colilert 18)

Method References: *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, APHA, AWWA-WPCF.*Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water*, USEPA/EMSL.

Analytical Results

(Work order: 1B22049)

Sample: **23 Theodore Foster Drive, Foster, RI 02857 (Rou 1)**

Category: Microbiology

Parameter	Result	Units	Detection Limit*	Recommended maximum
Total Coliform and E. Coli	Absent	P/A	1.00	Must be Absent

Abbreviations: ND = Not Detected
**The Detection Limit is the lowest concentration can be measured.*

1 B 2 2049 #

NETL

PRIVATE PARTY SAMPLE CUSTODY SHEET

Name and Mailing address for report (Please Print):
Dependable Pump Repair
111 Robinson St
Warwick, RI 02879-3509

Telephone # (401) 233-2393

Email Address: Sfmitchell67@gmail.com

Sample Collected From (Address)
23 Theodore Foster Rd (Rou 1)
Foster RI.

What Date was the sample collected? 02/22/21
What Time was the sample collected? 2:03 pm

Is this Sample: Well Water [X] Town Water [ ] Soil [ ] Other [ ]

What tests are being requested?

Total Coliform Bacteria / E. coli (X)
Basic Series ( )
Rhode Island Series ( )
Complete Series ( )
Comprehensive Series ( )
Enterococci ( )

Other (list) ( )

I certify that I have collected the submitted sample from the location listed above according to the instructions provided. I understand that New England Testing Laboratory is responsible only for conducting the tests I request on the sample I submitted and reporting those results to me.

x Stephen F. Mitchell

FOR LAB USE ONLY:

Received by Allen Smith at Temp _____ °C
PAYMENT: CASH ( ); CARD (X) CHECK ( ) – CHECK # _____ AMOUNT 35.00

OL

New England Testing Laboratory, Inc.
(401) 353-3420

Certificate of Analysis

Prepared For:

Dependable Pump Repair
111 Robinson St.
Wakefield, RI 02879

Date Reported: 3/1/2021
Reference: Laboratory Work Order Number: 1B22050

Enclosed are the results for the sample(s) received on 22-February-2021.

Please contact us if you have any questions.

Mike Mccallum, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill St.
West Warwick, RI 02893
mike.mccallum@newenglandtesting.com

www.newenglandtesting.com

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These results have been obtained through testing the submitted sample for the parameters listed above in accordance with accepted practices in environmental bacteriology and/or analytical chemistry. This warranty is in lieu of all other warranties, either expressed or implied.

Laboratory licenses/certifications:
RI: LAI00351, MA: M-RI010, NY: 11673, CT: PH-0740, NH: 2033

Samples Submitted 2/22/2021 3:48:00PM

Work order: 1B22050

Sample: 23B Theodore Foster Drive, Foster, RI 02857 (Rou 2)

Laboratory Number	Date and Time Sampled	Sample Matrix
1B22050-01	2/22/2021 2:25:00PM	Drinking water

Request for Analysis

(Work order 1B22050)

Sample: 23B Theodore Foster Drive, Foster, RI 02857 (Rou 2)

Analysis	Method
Total Coliform and E. coli bacteria	SM9223B(04) (Colilert 18)

Method References: *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, APHA, AWWA-WPCF.*Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water*, USEPA/EMSL.

Analytical Results

(Work order: 1B22050)

Sample: **23B Theodore Foster Drive, Foster, RI 02857 (Rou 2)**

Category: Microbiology

Parameter	Result	Units	Detection Limit*	Recommended maximum
Total Coliform and E. Coli	Absent	P/A	1.00	Must be Absent

Abbreviations: ND = Not Detected
**The Detection Limit is the lowest concentration can be measured.*

1 B 2 2050)

NETL

PRIVATE PARTY SAMPLE CUSTODY SHEET

Name and Mailing address for report (Please Print):
Dependable Pump Repair
111 Robinson St
Warefield, RI 02879-3509

Telephone # (401) 233-2393

Email Address: Sfmitchell67@gmail.com

Sample Collected From (Address)
23 B Theodore Foster Dr (Rou 2)
Foster, RI.

What Date was the sample collected? 02/22/21
What Time was the sample collected? 2:25 pm

Is this Sample: Well Water [X] Town Water [ ] Soil [ ] Other [ ]

What tests are being requested?

Total Coliform Bacteria / E. coli (X)
Basic Series ( )
Rhode Island Series ( )
Complete Series ( )
Comprehensive Series ( )
Enterococci ( )

Other (list) ( )

I certify that I have collected the submitted sample from the location listed above according to the instructions provided. I understand that New England Testing Laboratory is responsible only for conducting the tests I request on the sample I submitted and reporting those results to me.

x Stephen F. Mitchell

FOR LAB USE ONLY:

Received by [signature] at Temp _____ °C
PAYMENT: CASH ( ); CARD (X); CHECK ( ) – CHECK # _____ AMOUNT 35.00

OL

New England Testing Laboratory, Inc.
(401) 353-3420

Certificate of Analysis

Prepared For:

Dependable Pump Repair
111 Robinson St.
Wakefield, RI 02879

Date Reported: 3/1/2021
Reference: Laboratory Work Order Number: 1B22051

Enclosed are the results for the sample(s) received on 22-February-2021.

Please contact us if you have any questions.

Mike Mccallum, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill St.
West Warwick, RI 02893
mike.mccallum@newenglandtesting.com

www.newenglandtesting.com

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These results have been obtained through testing the submitted sample for the parameters listed above in accordance with accepted practices in environmental bacteriology and/or analytical chemistry. This warranty is in lieu of all other warranties, either expressed or implied.

Laboratory licenses/certifications:
RI: LAI00351, MA: M-RI010, NY: 11673, CT: PH-0740, NH: 2033

Samples Submitted 2/22/2021 3:49:00PM

Work order: 1B22051

Sample: 23 C Theodore Foster Drive, Foster, RI (Rou 3)

Laboratory Number	Date and Time Sampled	Sample Matrix
1B22051-01	2/22/2021 2:36:00PM	Drinking water

Request for Analysis

(Work order 1B22051)

Sample: 23 C Theodore Foster Drive, Foster, RI (Rou 3)

Analysis	Method
Total Coliform and E. coli bacteria	SM9223B(04) (Colilert 18)

Method References: *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, APHA, AWWA-WPCF.*Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water*, USEPA/EMSL.

Analytical Results

(Work order: 1B22051)

Sample: **23 C Theodore Foster Drive, Foster, RI (Rou 3)**

Category: Microbiology

Parameter	Result	Units	Detection Limit*	Recommended maximum
Total Coliform and E. Coli	Absent	P/A	1.00	Must be Absent

Abbreviations: ND = Not Detected
**The Detection Limit is the lowest concentration can be measured.*

1 B 2 2051 /

NEL

PRIVATE PARTY SAMPLE CUSTODY SHEET

Name and Mailing address for report (Please Print):
DEPENDABLE PUMP REPAIR
111 ROBINSON ST
WAKEFIELD, RI. 02879-3509

Telephone # (401) 233-2393

Email Address: Sfmitchell67@gmail.com

Sample Collected From (Address)
23 C THEODORE FOSTER DR (Row 3)
FOSTER RI.

What Date was the sample collected? 02/22/21
What Time was the sample collected? 2:36 PM.

Is this Sample: Well Water [X] Town Water [ ] Soil [ ] Other [ ]

What tests are being requested?

Total Coliform Bacteria / E. coli (X)
Basic Series ( )
Rhode Island Series ( )
Complete Series ( )
Comprehensive Series ( )
Enterococci ( )

Other (list) ( )

I certify that I have collected the submitted sample from the location listed above according to the instructions provided. I understand that New England Testing Laboratory is responsible only for conducting the tests I request on the sample I submitted and reporting those results to me.

x Stephen F. Mitchell

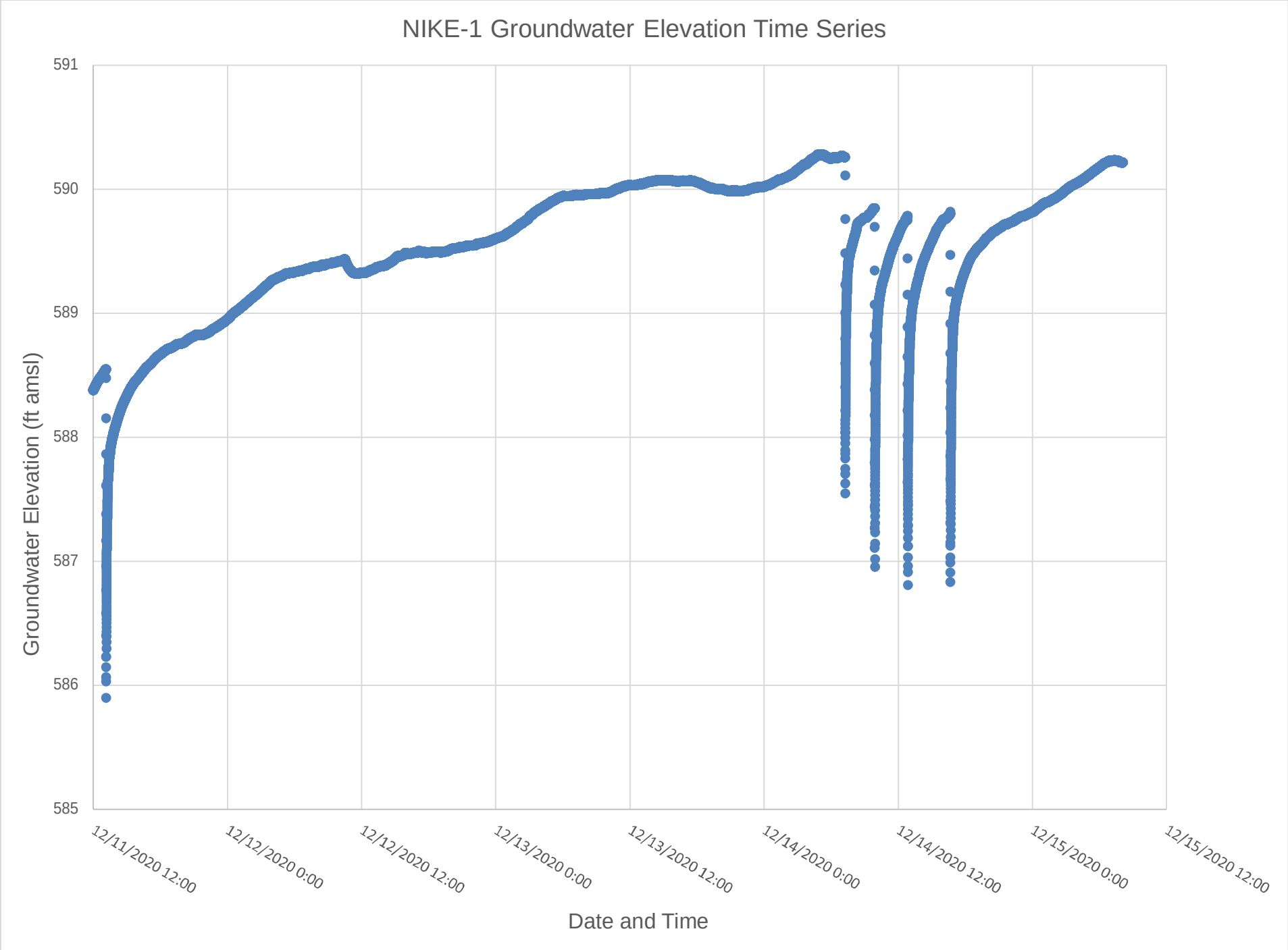
FOR LAB USE ONLY:

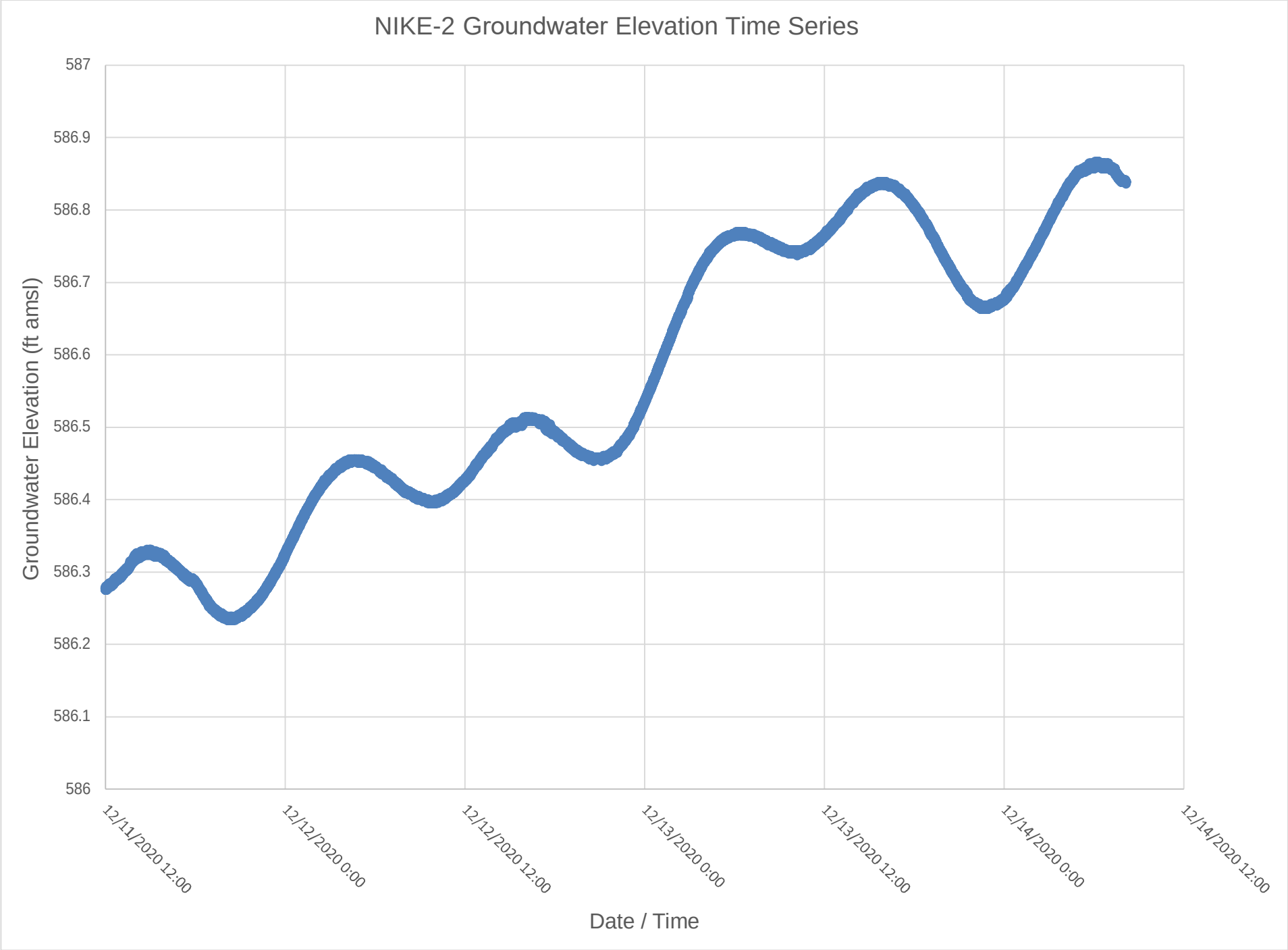
Received by [signature] at Temp _____ °C
PAYMENT: CASH ( ); CARD (X); CHECK ( ) – CHECK # _____ AMOUNT 35.00

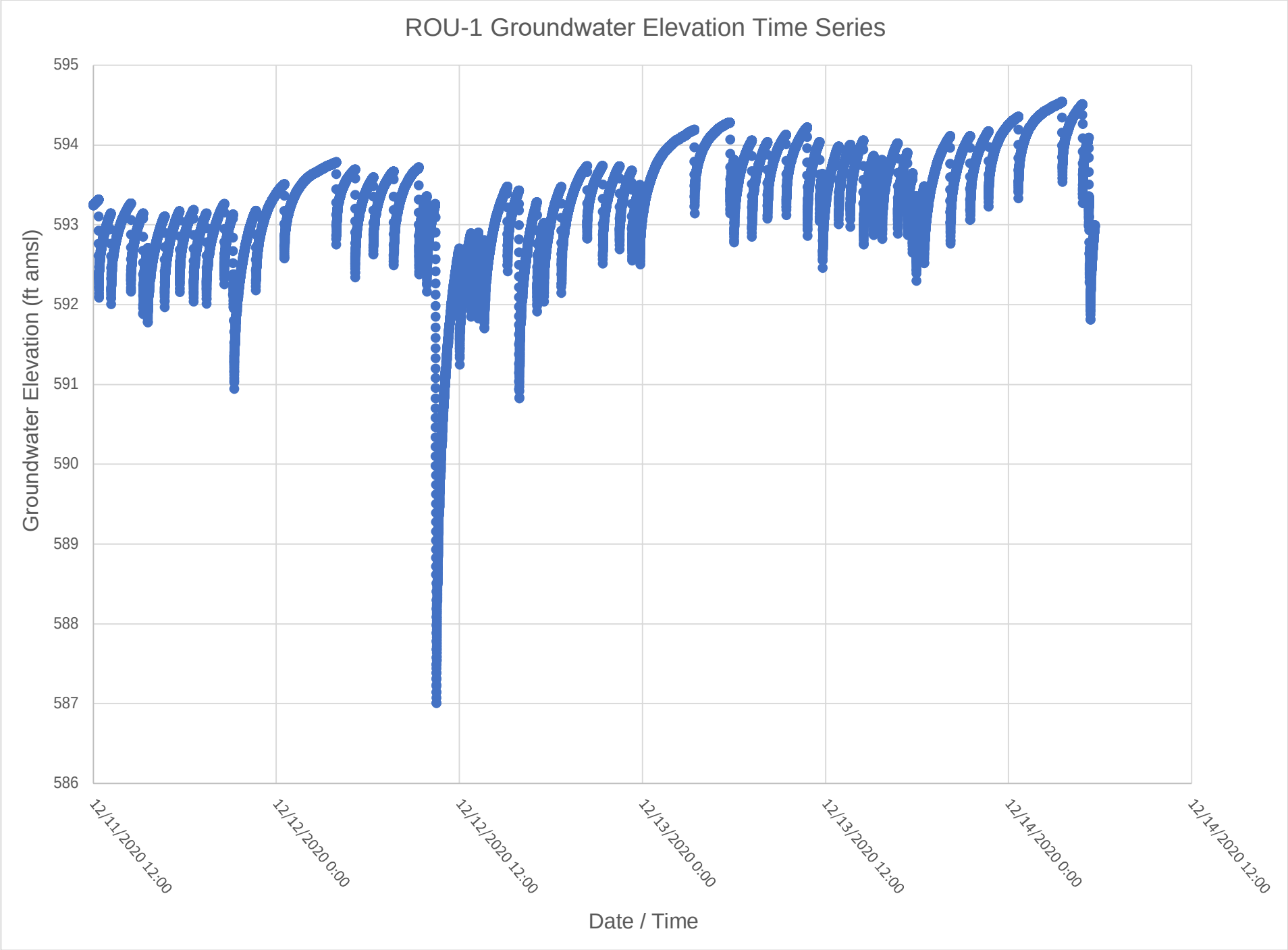
OL

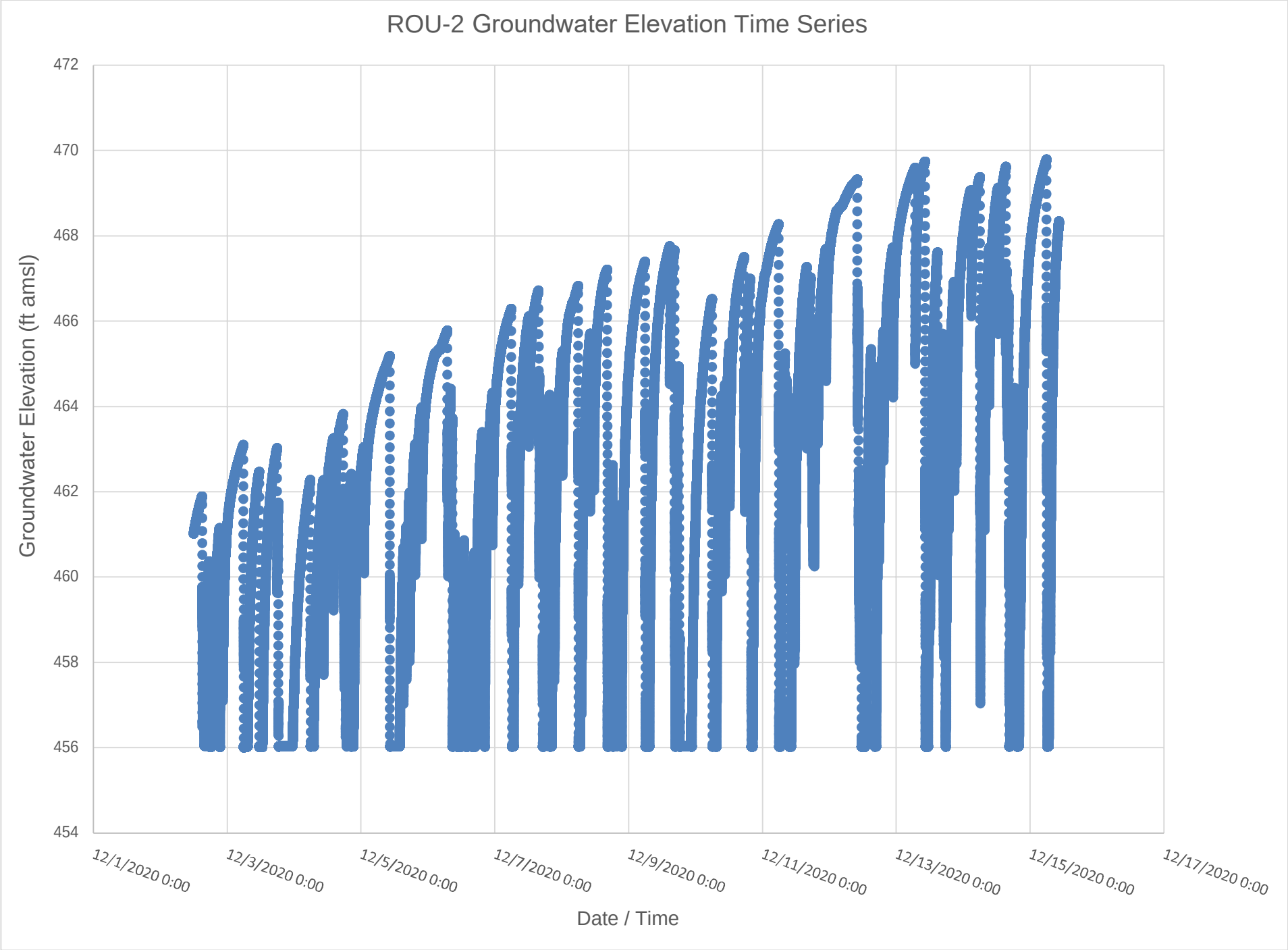
Appendix K

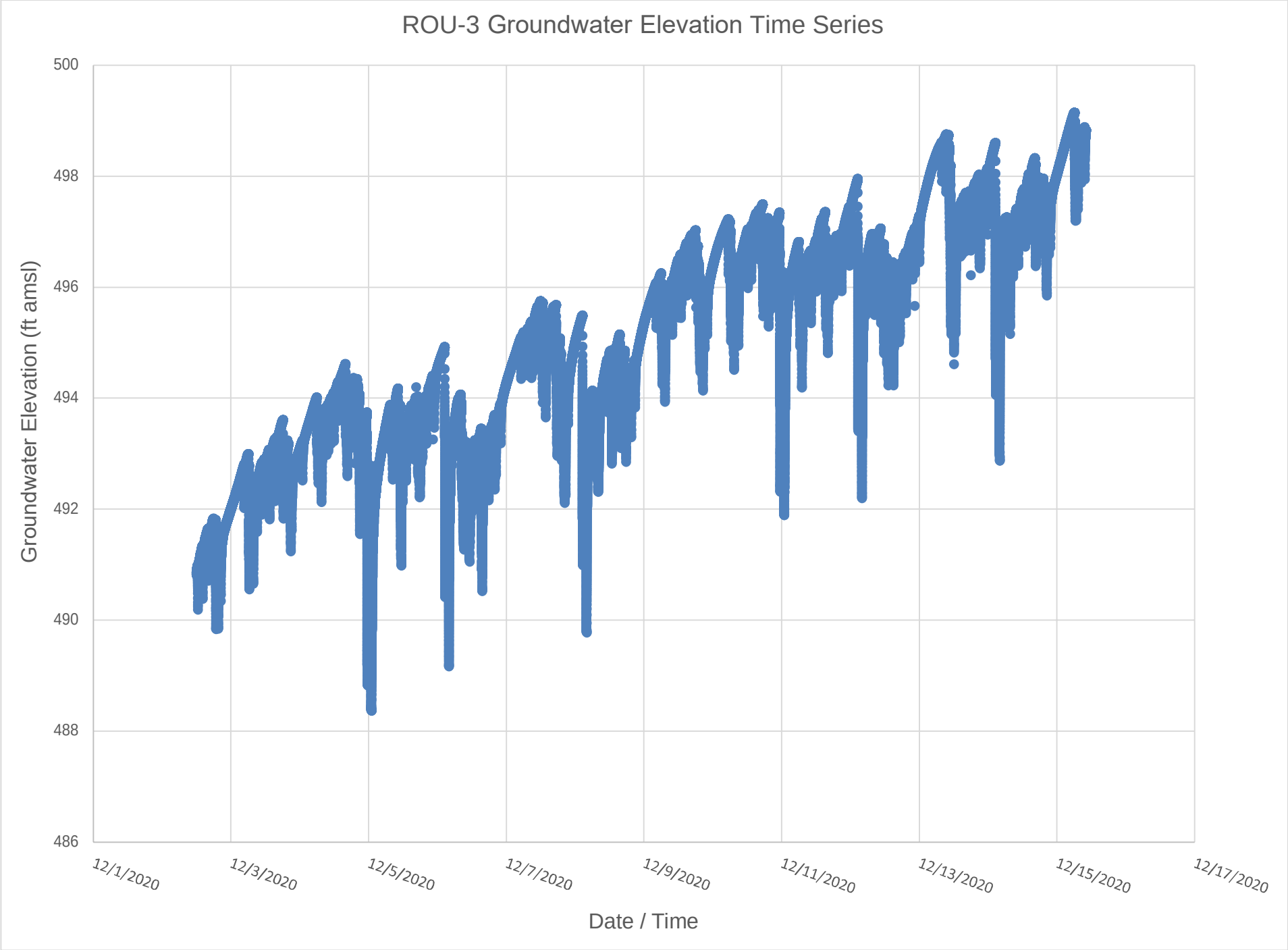
Bedrock Fracture Connection Time Series Data

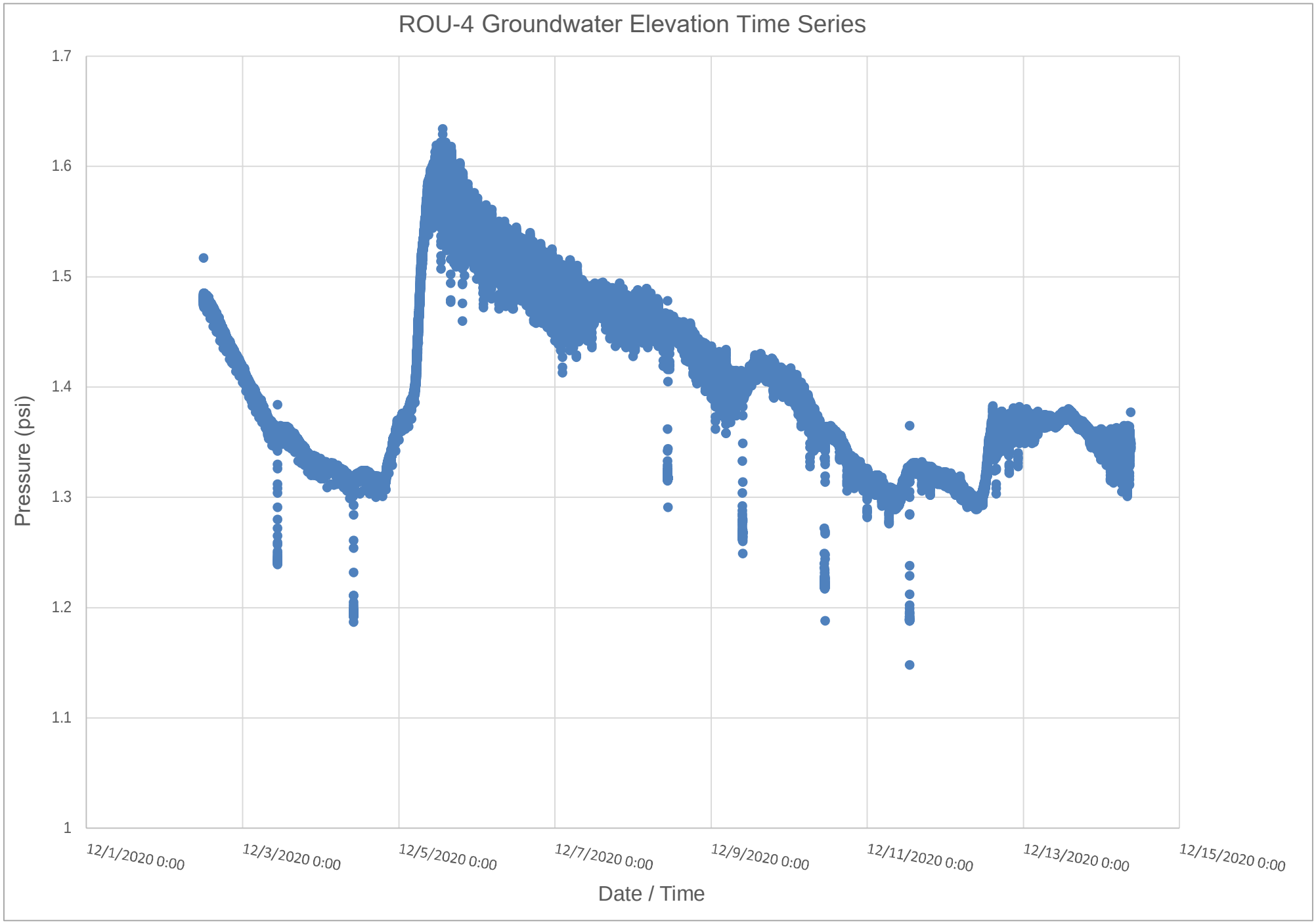

NIKE-1 Groundwater Elevation Time Series
Groundwater Elevation (ft amsl)
591
590
589
588
587
586
585
12/11/2020 12:00
12/12/2020 0:00
12/12/2020 12:00
12/13/2020 0:00
12/13/2020 12:00
12/14/2020 0:00
12/14/2020 12:00
12/15/2020 0:00
12/15/2020 12:00
Date and Time


NIKE-2 Groundwater Elevation Time Series
Groundwater Elevation (ft amsl)
587
586.9
586.8
586.7
586.6
586.5
586.4
586.3
586.2
586.1
586
12/11/2020 12:00
12/12/2020 0:00
12/12/2020 12:00
12/13/2020 0:00
12/13/2020 12:00
12/14/2020 0:00
12/14/2020 12:00
Date / Time

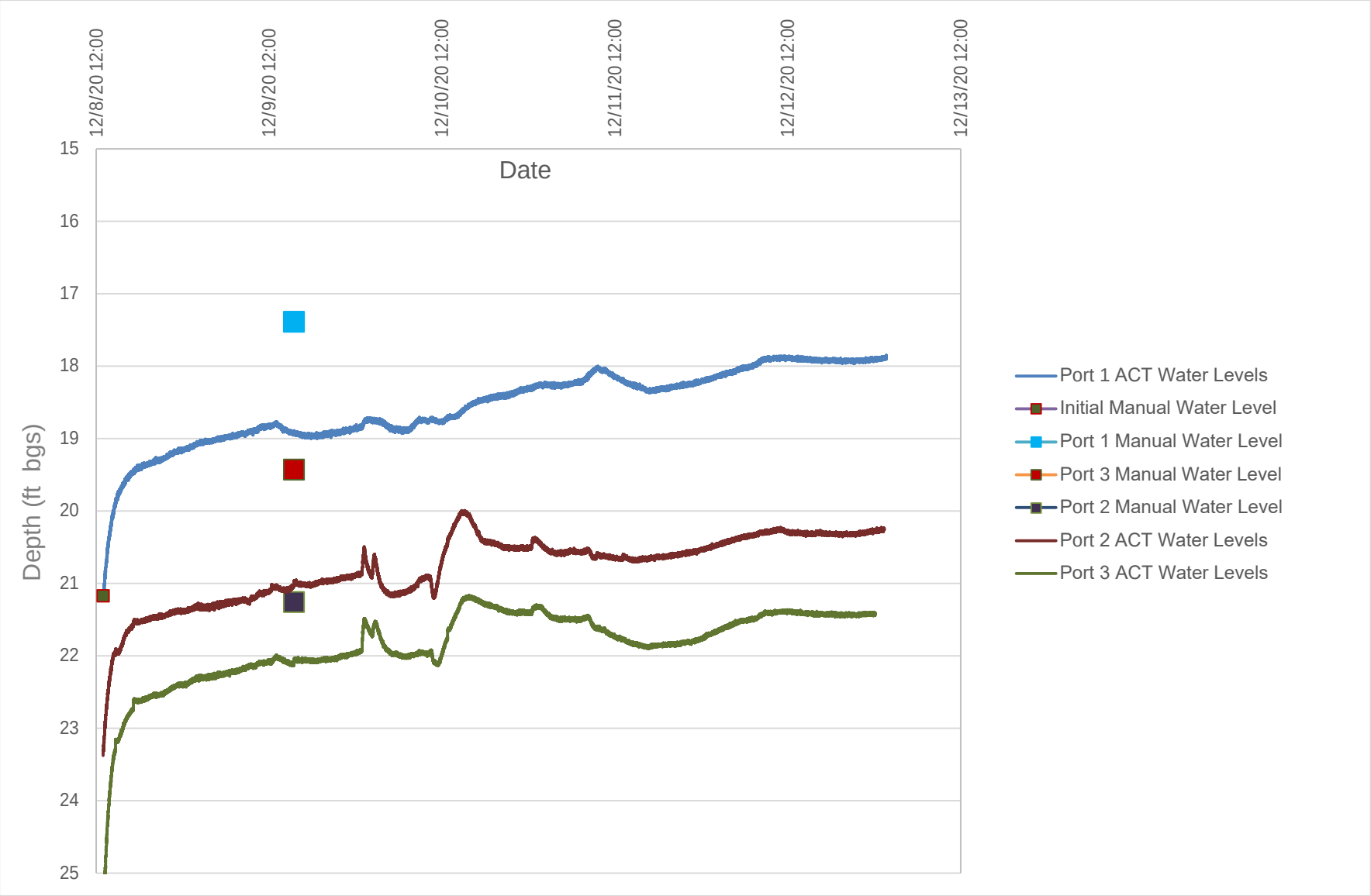

ROU-1 Groundwater Elevation Time Series
Groundwater Elevation (ft amsl)
595
594
593
592
591
590
589
588
587
586
12/11/2020 12:00
12/12/2020 0:00
12/12/2020 12:00
12/13/2020 0:00
12/13/2020 12:00
12/14/2020 0:00
12/14/2020 12:00
Date / Time


ROU-2 Groundwater Elevation Time Series
Groundwater Elevation (ft amsl)
472
470
468
466
464
462
460
458
456
454
12/1/2020 0:00
12/3/2020 0:00
12/5/2020 0:00
12/7/2020 0:00
12/9/2020 0:00
12/11/2020 0:00
12/13/2020 0:00
12/15/2020 0:00
12/17/2020 0:00
Date / Time

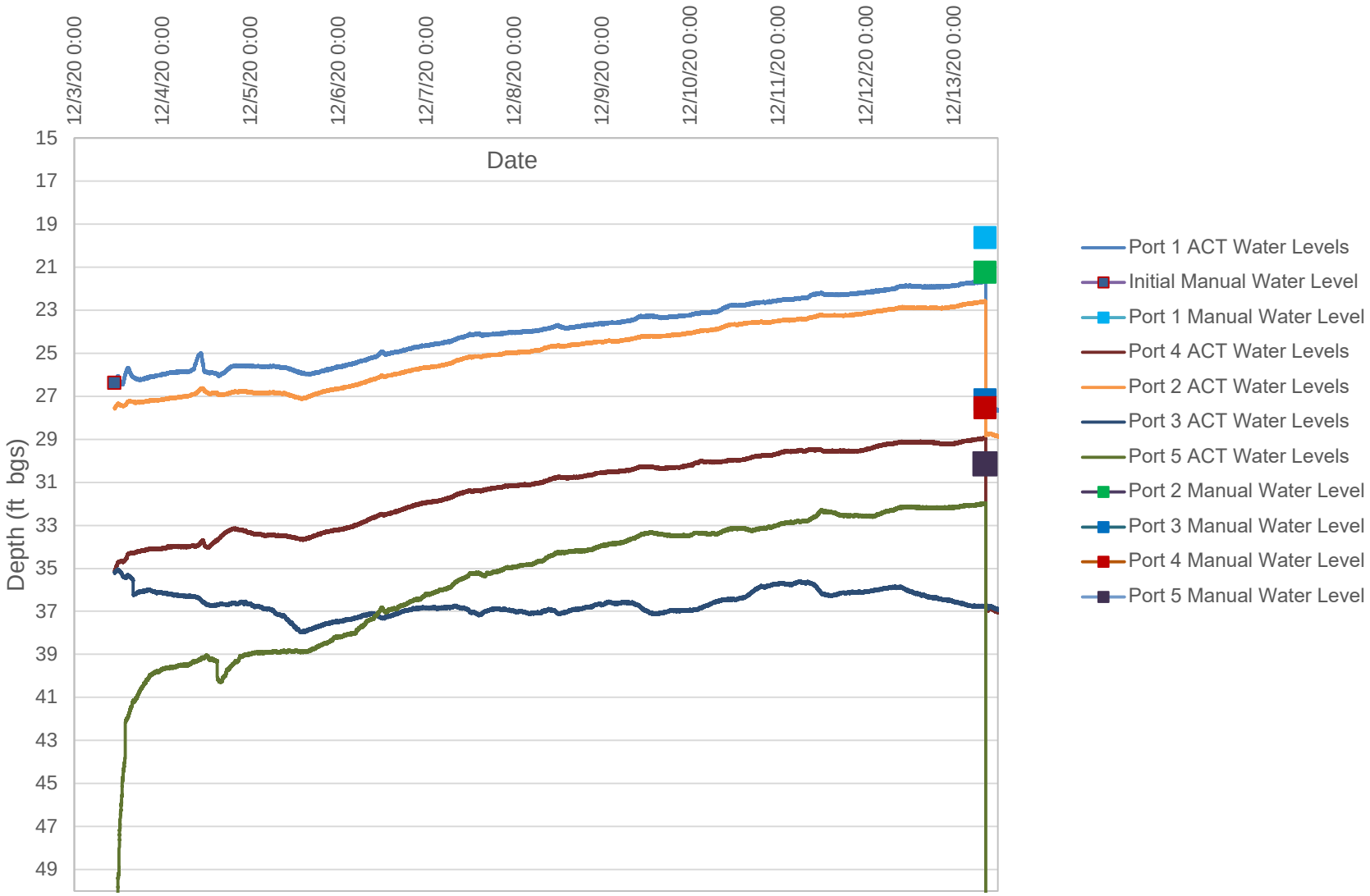

ROU-3 Groundwater Elevation Time Series
Groundwater Elevation (ft amsl)
500
498
496
494
492
490
488
486
12/1/2020
12/3/2020
12/5/2020
12/7/2020
12/9/2020
12/11/2020
12/13/2020
12/15/2020
12/17/2020
Date / Time


ROU-4 Groundwater Elevation Time Series
Pressure (psi)
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
12/1/2020 0:00
12/3/2020 0:00
12/5/2020 0:00
12/7/2020 0:00
12/9/2020 0:00
12/11/2020 0:00
12/13/2020 0:00
12/15/2020 0:00
Date / Time

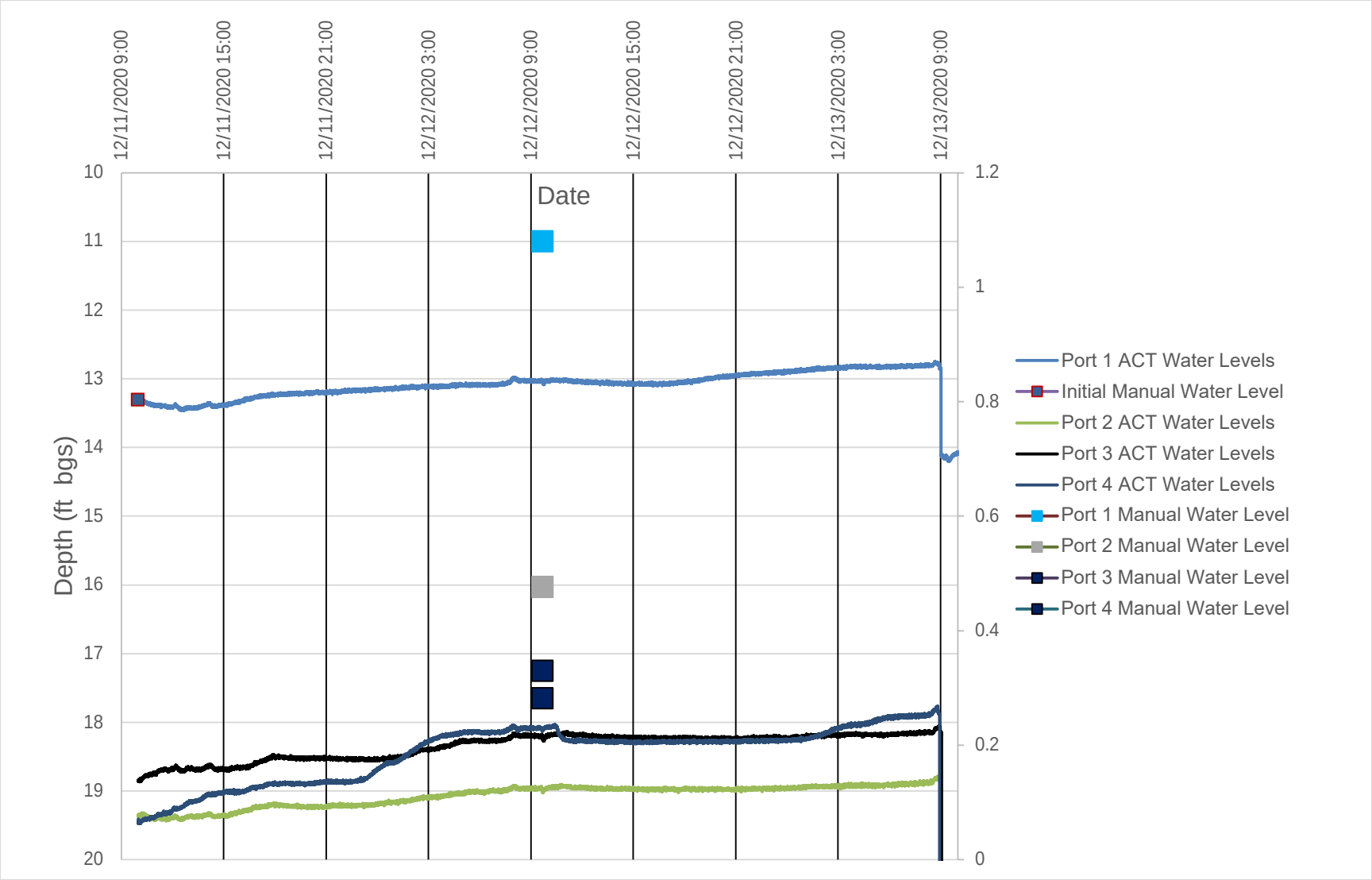
PR79-BR-01 Groundwater Elevation Time Series



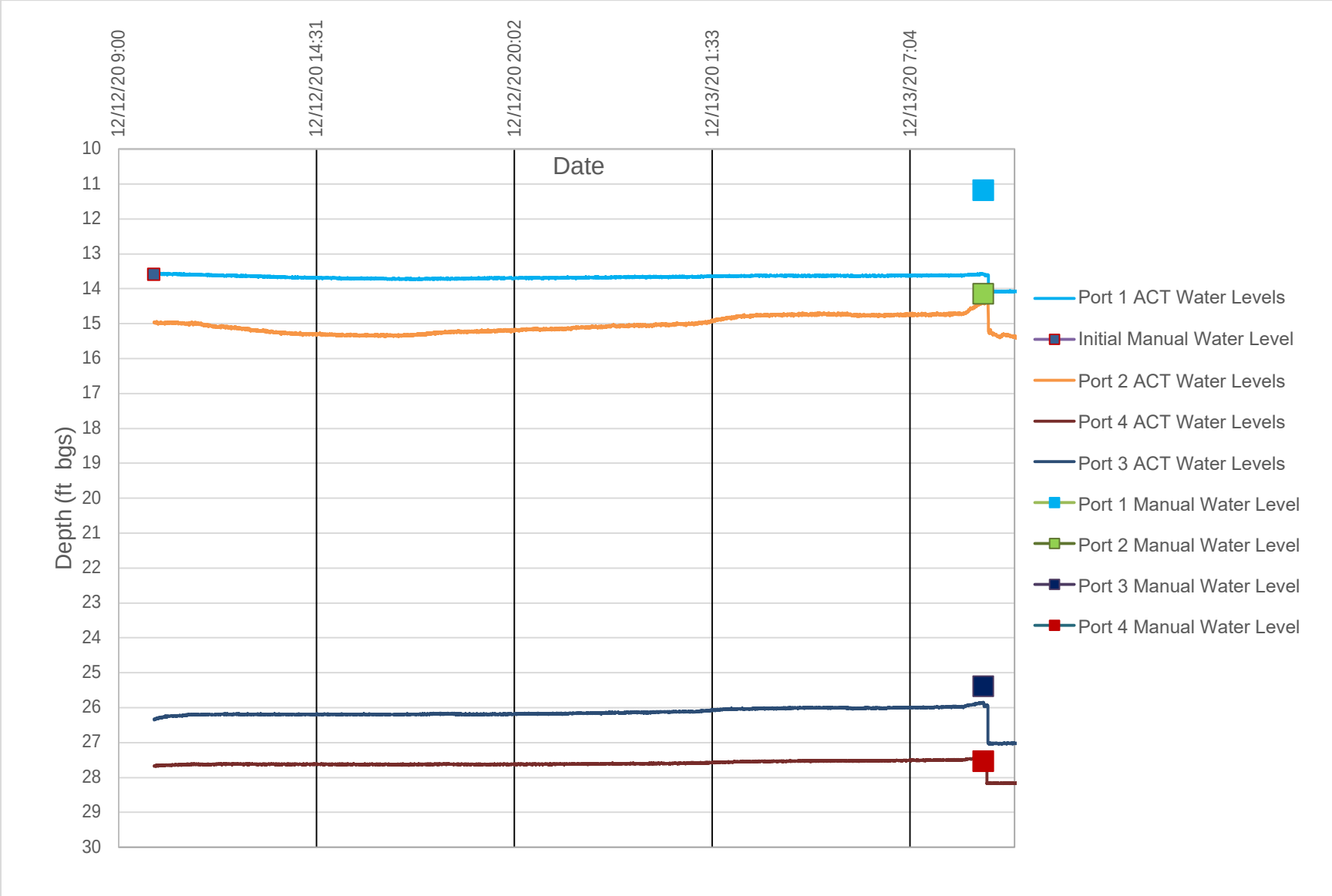
PR79-BR-02 Groundwater Elevation Time Series



PR79-BR-03 Groundwater Elevation Time Series



PR79-BR-04 Groundwater Elevation Time Series



Appendix L

Surface Water, Porewater, and Sediment Sample Logs

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-001
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-001-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-001-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 1'		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-4-20	1420	7.51	4.33	56	8.02	12.84	210.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-4-20	1358 / 1417	9.98 / 8.10	4.85 / 4.52	72 / 64	238 / 136	14.38 / 12.53	146 / 246.1

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Brown/Tan SILT & Fine SAND, trace medium sand, v. loose, saturated

Stream/wetland features (width, depth, flowing/non-flowing):

non-flowing kettle pond, 30' x 100', 4' depth

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR-79-WT-002 (Duplicate)
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-002-SW-01 (Duplicate)		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-002-SD-01 (Duplicate)		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 0.5 ft		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-11-2020	0920	11.29	8.64	96	0.02	10.14	161.2

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-11-2020	1251 / 1313	2.83 3.28	5.70 / 5.84	107 / 104	175 / 0.02	12.29 / 11.73	129.7 / 147.3

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

DK Brown fine to coarse SAND, little fine gravel, trace silt/twigs, saturated, medium dense

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing stream approx 5 ft wide, 0.5 ft deep

Manometer: positive pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-003
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-003-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-003-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 1.5'		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-11-2020	1055	11.49	6.31	96	0.02	10.72	185.7

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-11-2020	1140 / 1153	4.79 / 5.92	6.46 / 5.91	112 / 98	~~102~~ 132 / 5.93	12.04 / 11.55	90.1 / 89.7

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Brown / Dk Brown Fine to coarse SAND, trace (g gravel, saturated), medium dense

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing stream approx 25 ft across

Manometer: positive pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-004
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-004-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-004-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 1.5ft		Thickness of sed. (inches): 10"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
~~5-8-2012~~ 5-11-2012	0955	11.85	6.46	95	0.02	10.78	185.4

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-8-2012	1005 / 1120	7.63 / 7.77	7.40 / 5.88	118 / 58	301 / 136	12.28 / 12.76	202.4 / 218.:

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Dk Brown fine to medium SAND, little coarse sand, trace roots/twigs, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, 20ft width, 1.5ft depth mid-stream

Manometer: negative pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79 - WT-005
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-005-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-005-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 6"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/6/2020	1400	8.19	5.60	80	0.02	15.08	82.9

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/6/2020	1355 / 1335	1.52 / 1.17	5.49 / 5.45	84 / 79	15.3 / 0.87	15.60 / 15.34	443 / -23

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Brown medium / coarse SAND, little fine sand & silt, trace fine gravel, saturated, med. dense

manometer: negative pressure

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, approx 30 ft width, 0.7 ft depth

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79_WT-006
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR-79-WT-006-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-006-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 1 ft		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/5/2020	1242	4.13	5.71	80	0.78	14.62	158.5

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/5/2020	1234 / 1239	2.06 / 2.40	5.61 / 5.71	77 / 76	9.20 / 0.02	15.20 / 14.01	167.9 / 158.6

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Brown/Tan Medium-coarse SAND; fine GRAVEL, trace fine sand, medium dense, saturated

manometer: negative pressure

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, approx 20 ft width, 1 ft deep mid-stream

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-007
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-007-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-007-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: < 1"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/21/20 @ 1455

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/21/20 @ 1510

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/21/20	1453	3.36	4.89	69	2.63	19.42	159.3

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/21/20	1505 / 1530	3.18 / 6.03	4.54 / 5.35	67 / 78	5.82 / 1.74	18.35 / 20.81	164.2 / 103.7

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Yellow-brown SW (P-C SAND, some fines), Trace F Gravel, wet, medium dense

Stream/wetland features (width, depth, flowing/non-flowing):

3' wide, rut from old logging road in seasonal wetland, not flowing

positive 0.20

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-008
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-008-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-008-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 2"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5/14/20	1315	9.44	8.65	25	0.02	15.13

Pore Water Water Quality Parameters

measurements taken thru flow thru cell

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5/14/20	1431 / 1434	3.51 / 0.8	7.85 / 6.11	74 / 71	11.3 / 3.12	11.86 / 11.39

reduced flow by 1/2 after 1st reading

Remarks visual obs of WQ are stable

Sediment characterization (moisture, relative density, color, and texture (using the USCS)) Lots of organic material (roots) in soil. Dark brown silt loam. Fully saturated. H_2S odor from wetland soil. Decomposing org matter @ surface.

Stream/wetland features (width, depth, flowing/non-flowing):

Surface water was approximately 2 inches deep at sample location. Samples were collected approximately 1 inch down. Sample location is where the stream enters the pond. Manometer reading positive 0.02 ft

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-009
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-009-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-009-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 7"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/14/20 @ 1415

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/14/20 @ 0940

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM 5/14/20 @ 0950

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-14-2020	1421	6.34	5.63	46	~~14~~ 2.78	14.74	225.3

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/14/20	0935 / 0945	4.09 / 8.39	7.18 / 6.06	66 / 33	33.6 / 0.02	12.74 / 12.26	201.1 / 175.3

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Dark brown to black silty F SAND, some organics, trace F angular Gravel, Trace M-C Sand at bottom, wet, loose

USCS SWSM

Stream/wetland features (width, depth, flowing/non-flowing):

3' wide, 7" deep at sample location, flowing

pressure positive. Height in tubing = 0.04'

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-010
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-010-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-010-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 0.5 ft		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-14-2020	1436	0.45	5.65	36	1.87	16.33	225.0

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
6-12-2020	1110 / 1135	4.35 / 5.92	5.89 / 5.47	61 / 32	18.9 / 0.02	12.43 / 13.88	148.1 / 152.4

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Dk Brown / Brown SILTY fine SAND, little medium sand & roots/twigs/leaves/algae, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing stream, approx 5 ft width, 0.5 ft deep

manometer: negative pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-011
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-011-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-011-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 0.3 ft		Thickness of sed. (inches): 6"

Surface water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Pore water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Sediment analysis: **AVS/SEM, Metals, Grain size, VOC, SVOC-SIM**

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
~~5/12/2020~~ 5/14/20	1453	6.78	5.37	34	1.97	15.73	276.9

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/12/2020	1345 / 1425	3.72 / 3.32	4.31 / 4.62	32 / 28	173 / 6.54	13.55 / 15.38	149.8/150.1

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Black / DK Brown Fine SAND & SILT, Little medium sand & algae / leaves / roots, (saturated) / soft

Stream/wetland features (width, depth, flowing/non-flowing):

Non-flowing wetland, positive pressure

manometer: positive pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-012
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-012-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-012-SD-01		Sed. collection method: sugar/Ekman
Depth of water overlying sediment: 3"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/14/20 @ 1510

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/14/20 @ 1050

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM 5/14/20 @ 1105

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-14-2020	1510	6.52	5.43	36	3.88	14.79	257.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/14/20	1045 / 1100	2.17 / 2.42	4.09 / 4.75	27 / 122	37.2 / 20.7	15.55 / 13.77	72.5/89.1

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Black Silty F SAND (SW-SM), loose, wet, Trace M-C Sand, trace organics

Stream/wetland features (width, depth, flowing/non-flowing):

2' wide, 3" deep at sample location, flowing

pressure. 0.02 positive

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-013
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-013-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-013-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 1"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/19/20 @ 1345

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/19/20 @ 1330

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM 5/19/20 @ 1355

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/19/20	1340	4.98	5.34	30	18.5	16.06	166.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/19/20	1325 / 1335	2.51 / 1.99	4.89 / 5.07	73 / 51	380 / 178	16.14 / 15.60	154.9 / 127.1

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Gray to light brown SILT and FSAND (SM), organics on top 1-2", wet, trace C sand, dense

Stream/wetland features (width, depth, flowing/non-flowing):

5' wide, shallow (1-2"), nonflowing

pressure: positive 0.01

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-014
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-014-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-014-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 0.3 ft		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	1600	5.45	5.36	50	6.85	10.57	160.2

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	1510 / 1615	3.01 / 4.55	5.27 / 5.40	49 / 50	13.5 / 374	12.84 / 11.00	183.3 / 178.1

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Black SILT & VF SAND, some (fine sand), trace medium to coarse sand, leaves/twigs, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

flowing 5 ft wide stream, 0.3 ft deep

manometer: neg pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-015
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-015-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-015-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 6"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	1326	2.20	6.92	45	15.8	12.91	78.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (.g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	~~1255~~ 1309	~~3.73~~ 3.30	6.17 / 6.12	116 / 104	19.1 / 63.2	~~13.47~~ 11.54	75.9 \ 60.2

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Brown / Dk Tan fine to medium SAND, some silt, trace coarse sand, saturated, medium dense

DK = Dark

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, 5 ft width, 0.8 ft mid-stream depth

manometer: negative pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-016
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-016-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-016-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 4-6"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/21/20 @ 1155

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/21/20 @ 1140

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM 5/21/20 @ 1215

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/21/20	1155	4.26	4.13	22	9.01	11.94	-16.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/21/20	1135/1150	2.98/2.79	4.06/4.35	26/26	83.2/4.76	13.46/12.13	201.5/209.7

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

0-4" Dark brown to black SW SM, Trace organics, trace C sand; 4-6" yellow-gray F SAND and SILT (SM), trace C Sand, dense, wet

Stream/wetland features (width, depth, flowing/non-flowing):

2' wide, 4-6" deep, flowing

pressure: 0.02 positive

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-017
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-017-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-017-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 3"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/21/20 @ 1035

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM 5/21/20 @ 1020

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM 5/21/20 @ 1050

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/21/20	1032	3.40	3.87	36	0.32	12.40	200.4

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/21/20	1015 / 1027	2.41 / 2.61	5.82 / 4.31	111 / 36	166 / 5.09	14.90 / 13.32	151.8 / 184.3

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Dark brown to black SW SM, wet, dense, some organics, Trace M-C Sand

Stream/wetland features (width, depth, flowing/non-flowing):

2' wide, 3-6" deep, flowing

pressure: -0.06 (negative)

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79 - WT-018 (Duplicate)
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-018-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-018-SD-01		Sed. collection method: Sugar/Ekman
Depth of water overlying sediment: 6"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	1420	6.90	4.31	24	0.02	13.14	177.4

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	1350 / 1414	2.56 / 3.43	4.60 / 4.10	27 / 25	164 / 74.1	12.71 / 12.58	118.2/181.9

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

DK Brown SILT & VF/F SAND, little medium sand, twigs, saturated, loose

VF= Very fine F= fine

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream (width) 10 ft, 0.5 ft depth mid-stream

manometer: negative pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-019
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR-WT-019-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR-WT-019-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 5"		Thickness of sed. (inches): 6"

Surface water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Pore water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Sediment analysis: **AVS/SEM, Metals, Grain size, VOC, SVOC-SIM**

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/6/20	1140	8.08	5.49	26	0.02	12.26	186.6

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (.g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/6/20	1120/1130	3.63/3.77	5.83/5.81	74/73	32.6/23.2	12.16/11.52	165.6/172.8

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

Black SILT & V.F. SAND, leaves & twigs, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, 10 ft width, 0.7 ft mid stream depth

manometer: positive pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79 - WT - 020
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-020-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-020-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 1 ft		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	1020	8.46	5.14	25	0.02	10.85	203.3

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5-6-2020	0950 / 1018	3.24 / 3.47	4.86 / 5.17	100 / 40	94.8 / 31.6	13.23 / 12.68	216.0 / 235.3

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Dk Brown fine to medium SAND, little silt, trace coarse sand & fine gravel, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, 5 ft width, mid-stream depth = 1 ft

Manometer: positive pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-021 New GPS "021 B Squillacci"
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-021-SW-01		SW collection method: ~~grab~~/pump
Sediment Sample ID # PR79-WT-021-SD-01		Sed. collection method: Auger/Ekman
Depth of water overlying sediment: 3 in		Thickness of sed. (inches): varies, pockets up to 12"+ b/t boulders
Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM		
Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM		
Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM		

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5/14/20	16:00	7.79	6.03	19	0.02	13.50

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5/14/20	1716 / 1719	4.13 / 4.22	5.06 / 4.50	22 / 22	182 / 47.2	14.00 / 13.38
					17:15	17:16

initial purge @ 1715

See back → Turbidity: 0.02 NTU @ 17:19

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS]) dark brown/blk, roots throughout, mucky sandy loam, odorless

Stream/wetland features (width, depth, flowing/non-flowing): upper reaches of transient stream / Hill seep wetland about 60 ft accross. red maple canopy; understory viburnum & muscle wood; emergent: false Hellebore, Jack in pulpit, skunk cabbage, false salmons seal, water flowing south, pockets of H_2O 3 in deep.

Manometer reading = negative 0.01 ft to neutral

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-022
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-022-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-022-SW-01		Sed. collection method: Auger/Ekman
Depth of water overlying sediment: 8"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5/20/20	1130	~~[illegible]~~ 9.55	7.65	22	0.02	13.6

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5/20/20	1206 1208	2.89 2.6	6.6 / 5.9	23 / 23	90.6 / 10.3	14.02 / 13.75

Henry sampling ~1 ft deep

Remarks 0.02

Sediment characterization (moisture, relative density, color, and texture [using the USCS]) Sample taken from middle of stream fully saturated. Brown, sand (fine to coarse) and gravel. Some organic material (roots, leaves). gravel is ~~subrounded to~~ rounded to subangular

Stream/wetland features (width, depth, flowing/non-flowing): Boulders strewn, narrow, constrain stream segment. Sampling 4 inches down. Total 8 inches deep. Lots of small water falls. Pockets of sediments. Lots of moss. 250 ml/min flow for surface water 200 ml/min flow for pore water Manometer positive 0.02 inches. Upper 3 inches loose sand and gravel, then tapped in sampler into denser material another 9 inches. Henry sampler placed in middle of stream near surface water sample

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-023
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-023-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-023-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 6"		Thickness of sed. (inches): 6"

Surface water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Pore water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Sediment analysis: **AVS/SEM, Metals, Grain size, VOC, SVOC-SIM**

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/5/2020	1028	8.32	6.56	74	0.02	10.96	206.7

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/5/2020	0941 / 1026	4.74 / 2.73	7.72 / 6.42	468 / 344	115 / 1.05	11.12 / 11.04	275.6 / 227.3

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Dk Brown / lt tan fine to medium SAND, little silt, trace coarse sand, saturated, loose

Manometer: negative pressure

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, 15 ft width, 0.5 to 1 ft deep manometer: negative pressure

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-024
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-024-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-024-SD-01		Sed. collection method: Auger/Ekman
Depth of water overlying sediment: 12"		Thickness of sed. (inches): 3"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP mV
4/28/20	1110	10.97	10.14	166	14.4	7.37	167.7

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP mV
4/28/20	1105 / 1206	5.69 / 7.99	6.44 / 6.11	259 / 200	70.2 / 0.02	8.81 / 10.09	212.1 / -25.9

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Top 0.2': Black VF SAND & SILT, phragmites roots & stalks, saturated, v. soft/soft

Bttm 0.3': DK Bn to Gray F/C SAND, little ML, trace fine gravel, saturated, med. dense

Stream/wetland features (width, depth, flowing/non-flowing):

not flowing

@ bank of brook, expanded into wide wetland area

~12"

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-025
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-025-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-025-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 6"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP (mV)
4/28	1320	7.26	5.45	93	0.02	10.72	165.4

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP (mV)
4/28	1230 / 1310	7.55 / 2.64	6.39 / 5.37	119 / 122	60.4 / 6.45	8.62 / 8.96	628 / -30.

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

saturated, black, high organic content (roots, leaves etc), fine sand and silt, soft

Stream/wetland features (width, depth, flowing/non-flowing):

not flowing
6" deep
large wetland area adjacent to Winsor Brook

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: WT-026
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-026-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-026-SD-01		Sed. collection method. auger/Ekman
Depth of water overlying sediment: 1.0 ft		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4-29-20	1103	4.43	4.13	44	31.4	6.46	177.7

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	
4-29-20	0955/ 1057	12.46/ 13.27	7.57/ 5.01	103 / 75	163 / 117	12.02/ 11.43	112.2 / 67.8

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Black silt i phragmites roots, saturated, v. soft

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing wetland, heavy concentration of phragmites

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: WT-027
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-027-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-027-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 9"		Thickness of sed. (inches): 4" (2" of Peat)

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4-29-20	1135	7.80	5.25	51	6.36	10.10	114.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (.g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	
4-29-20	1140 / 1205	2.62 / 1.71	5.60 / 5.21	76 / 72	171 / 11.0	12.90 / 12.60	100.1 / 18.0

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

0-2": Brown peat

2"-6": Blk/Dk Bn SILTY F SAND, little medium sand, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing wetland, heavy concentration of phragmites

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: WT-028
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-028-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-028-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 10"		Thickness of sed. (inches): 2" Peat, 4" sediment

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4-29-20	1400	6.13	4.40	42	10.4	16.83	125.7

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (µg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	
4-29-20	BGS 1445	361 / 4.17	4.19 / 4.55	60 / 54	16.11 / 0.02	14.01 / 15.17	172.4 / 104.2

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Blk silt, little F sand, phragmites roots (2"-6")

0-2": Brown peat

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing wetland, medium concentration of phragmites

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-029
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-029-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-029-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 8"		Thickness of sed. (inches): 6"

Surface water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Pore water analysis: **Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM**

Sediment analysis: **AVS/SEM, Metals, Grain size, VOC, SVOC-SIM**

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/30/2020	1030	7.61	5.82	55	~~27.8~~ 38.4	7.12	171.0

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/30/2020	0941 / 1025	9.33 / 6.88	6.11 / 6.13	108 / 75	27.8 / 14.8	7.87 / 7.61	156.9 / 153.9

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

0-0.4 ft: Black SILT, some VF sand, phragmites roots/leaves, saturated, v. soft

0.4-0.5 ft: Grey F/M SAND, trace C sand & F gravel, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing wetland, medium concentration of phragmites

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-029
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-029-SW-01-R		SW collection method: grab/pump
Sediment Sample ID # ———		Sed. collection method: Auger/Ekman
Depth of water overlying sediment: 8"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/14/20	1320	9.80	0.34	82	2.17	11.0	74.9

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
							/

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Stream/wetland features (width, depth, flowing/non-flowing):

Revised surface water sample collected. Initial sample collected on 4/30/2020

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-030
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-030-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-030-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 10"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/30/2020	1102	5.15	6.31	52	7.08	7.81	200.1

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/30/2020	1055 / 1135	5.43 / 7.29	5.15 / 5.24	62 / 59	~~202~~ / ~~149.8~~ 82.9 / 9.98	8.07 / 8.50	~~82.9~~ / ~~9.98~~ 202 / 149.8

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

0-4": Black SILTY F SAND, pine needles/leaves, saturated, v soft

4"-6": Dk Grey F/M SAND, little silt, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing stream, 30 ft width, approx 1.5 ft depth mid-stream

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-030
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-030-SW-01-R		SW collection method: grab/pump
Sediment Sample ID #		Sed. collection method: auger/Ekman
Depth of water overlying sediment:		Thickness of sed. (inches):

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/14/20	1256	6.38	6.56	75	1.63	8.87	444

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (,g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
	/	/	/	/	/	/	/

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Stream/wetland features (width, depth, flowing/non-flowing):

* Revised surface water sample taken. Initial sample taken on 4/30/2020

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-031
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-031-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-031-SW-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 10"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/30/2010	1405	9.24	6.01	84	465	9.12	67.1 ~~-34.5~~

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/30/2010	1380/1400	7.73/1.93	6.06/6.01	100/98	58.5/16.4	9.50/9.20	-245/173

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

0-5": Black SILT & F SAND, leaves/roots, saturated, v. soft

5"-6": Grey f/m SAND, trace silt & coarse sand, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

Flowing stream, 30ft width, approx 25ft depth mid-stream

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-031
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-031-SW-01-R		SW collection method: grab/pump
Sediment Sample ID # ———		Sed. collection method: Jugger/Ekman
Depth of water overlying sediment: 10"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
5/14/2020	1233	9.70	6.97	130	0.75	13.10	114.6

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP

Remarks

Sediment characterization (moisture, relative density, color , and texture [using the USCS])

Stream/wetland features (width, depth, flowing/non-flowing):

Revised surface water sample (surface) taken. Initial sample taken on 4/30/2020

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-033
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-033-SW-01		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-033-SD-01		Sed. collection method: auger/Ekman
Depth of water overlying sediment: ~6"		Thickness of sed. (inches): 12"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/27/20	1330	13.41	7.36	89	0.02	7.18	196.4

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)	ORP
4/27/20	1345 / 1425	4.11 / 2.26	6.40 / 6.29	109 / 101	53.2 / 43.4	7.03 / 7.04	177.3

Remarks

Sediment characterization (moisture, relative density, color, and texture [using the USCS])

0-4": black silty fine SAND, pine needle/leaf debris, saturated

4-8" gray, fine to med. SAND, trace SILT, trace coarse SAND, saturated, loose

8-12": black to dark brown fine SAND, saturated, loose

Stream/wetland features (width, depth, flowing/non-flowing):

flowing

4' wide

high velocity given rain event

Surface Water, Pore Water, and Sediment Sample Log

LOCATION	Site: NIKE PR-79	LocID: PR79-WT-032
	Project Name: NIKE PR-79 RI/FS	Project #: 60608703
Surface water Sample ID # PR79-WT-032-SW-01 (MS/MSD)		SW collection method: grab/pump
Sediment Sample ID # PR79-WT-032-SD-01 (MS/MSD)		Sed. collection method: auger/Ekman
Depth of water overlying sediment: 7"		Thickness of sed. (inches): 6"

Surface water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Pore water analysis: Metals (total and dissolved), Hg, VOC, VOC SIM, SVOC SIM

Sediment analysis: AVS/SEM, Metals, Grain size, VOC, SVOC-SIM

Surface Water Water Quality Parameters

Date	Time (24 hr.)	DO (mg/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5-4-20	~~0900~~ 1035	6.74	6.19	87	0.02	17.99

Pore Water Water Quality Parameters

Date	Time (24 hr.)	DO (.g/L)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temperature (C)
5-4-20	0938/ 1027	4.78/ 3.25	5.81/ 6.38	197/ 87	445/ 265	15.56/ 15.88

Remarks

Sediment characterization (moisture, relative density, color , and texture (using the USCS))

Brown/Tan fine to medium SAND, little coarse sand, trace silty fine gravel, saturated, ~~[illegible]~~ loose

nanometer measurement: negative pressure

Stream/wetland features (width, depth, flowing/non-flowing):

flowing stream, approx 15 ft width, 3ft deep mid-stream

Appendix M

Survey Data

Remedial Investigation, Former Nike Battery PR-79 Control Area

Foster, Rhode Island

Field Work Performed on December 14-22, 2020

Prepared for AECOM, January 8, 2021, REV #1-January 15, 2021

Horizontal Datum based on Rhode Island State Plane (NAD83)

Vertical Datum based on NAVD88

Location of overburden wells, new bedrock wells, one hand dug well and stream gauges

All units in U.S. Survey Feet

1. Top of cap elevation taken from the highest point on the outer steel protective casing cap of each monitoring well. Measurement prohibitive due to FLUTe top hat.
2. Top of outer steel protective casing (without cap). Measurement prohibitive due to FLUTe top hat.
3. Measuring Point elevation taken on overburden wells from the highest point on the PVC well riser (where marked) with J- plug removed.
   Measuring Point elevation taken on FLUTe wells from the highest point on the brass rim (where marked).

Point Description	Northing	Easting	Ground Elevation	Top of Cap Elevation (1)	Top of Steel Casing Elevation (2)	Measuring Point Elevation (3)
PR-79-SB-101/PR79-MW-001	277003.26	269414.69	620.10	622.95	622.93	622.79
PR-79-SB-103/PR79-MW-002	276899.00	269493.59	618.83	621.12	621.10	620.87
PR-79-SB-104/PR79-MW-003	276939.76	269560.70	617.65	620.89	620.87	620.50
PR79-SB-106/PR79-MW-004	276741.33	269474.15	615.93	618.62	618.60	617.85
PR-79-SB-110/PR79-MW-005	276728.67	269160.60	596.80	599.48	599.46	599.04
PR79-MW-006	276510.49	269384.50	596.26	598.00	597.98	597.56
PR79-SB-114/PR79-MW-007	276288.58	269294.18	580.78	583.12	583.10	582.39
PR79-SB-118/PR79-MW-008	276975.78	268291.14	482.16	484.35	484.33	484.12
PR79-SB-107/PR79-BR-001	276823.91	269611.45	614.44	N/A	N/A	618.06
PR79-BR-002	276896.69	269486.55	618.95	N/A	N/A	622.48
PR79-BR-003	276664.25	269497.73	606.77	N/A	N/A	610.53
PR79-SB-111/PR79-BR-004	276583.13	269167.17	590.57	N/A	N/A	593.32
PR79-BR-005	276439.76	269631.06	596.79	N/A	N/A	600.71
PR79-WL-001(HAND DUG)	274333.97	267766.09	420.57	N/A	N/A	421.17
Point Description	**Northing**	**Easting**	**Top of Water Elevation**	**Stream Gauge Reading**	**Stream Gauge Elevation at 5.00' Mark**	**DATE**
NORTH STREAM GAUGE	272482.12	268500.04	376.36	0.95	380.41	December 22, 2020
SOUTH STREAM GAUGE	272059.63	268711.91	373.68	1.36	377.32	December 22, 2020

Appendix N

Investigation Derived Waste Documents

Straight Bill of Lading

MA103233

Please type or print

ACV

1. Generator EPA ID # (if applicable)	2. Page 1 of	3. Emergency Response #	4. Document Tracking Number
RID987492485	1	908-354-0210	ACV071607

5. Generator Name and Mailing Address
USACE NE DISTRICT (NIKE BATTERY)
696 VIRGINIA ROAD
CONCORD, MA 01742

Generator Phone: 978-905-2157

Generator's Site Address (if different)
USACE NE DISTRICT (NIKE BATTERY)
23A THEODORE FOSTER DRIVE
FOSTER, MA 02825

ACV Job Number

6. Transporter 1 Company Name: ACV ENVIRONMENTAL SERVICES INC
US EPA ID Number (if applicable): NJD003812047

7. Transporter 2 Company Name
US EPA ID Number (if applicable)

8. Designated Facility Name and Mailing Address
CYCLE CHEM, INC.
217 SOUTH FIRST STREET
ELIZABETH, NJ 07206

US EPA ID Number (if applicable): NJD003[illegible]

8. Designated Facility Phone: 908-355-5000

Generator

9a. HM	9b. Material Description (Proper shipping name, required if DOT Hazardous Material)	10. Containers No.	Type	11. Total Quantity	12. Unit (Wt/Vol)	
	1 NON RCRA NON DOT REGULATED MATERIAL	1514	DM	317 [illegible]	P	[illegible]
	2 NON RCRA NON DOT REGULATED MATERIAL	8 x 16	DM	[illegible]	P	[illegible]
	3					
	4					

14. Special Handling Instructions and Additional Information: D58131 SO 59749 SFSO#MA103233

1)Profile#120795 NON HAZ DRILL CUTTINGS - IDW WASTE 2)Profile#120794 PPE & PLASTIC

54 [illegible] [illegible]

16. Generator/Offeror's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded and are in all respects proper condition for transport according to applicable international and national governmental regulations.

Printed/Typed Name: [illegible] Signature: [illegible] Month Day Year: [illegible]

Transporter

17. Transporter 1 Acknowledgment of Receipt of Materials: MATERIAL
Printed/Typed Name: [illegible] Signature: [illegible] Month Day Year: 08 [illegible]

18. Transporter 2 Acknowledgment of Receipt of Materials
Printed/Typed Name: Signature: Month Day Year

Facility

19. Discrepancy Indication Space (to be completed by Designated Facility)

20. Discrepancy Facility: Certification of receipt of the materials covered by this shipping paper except as noted in item 19.
Printed/Typed Name: Signature: Month Day Year

MA104158

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: RID987492485
2. Page 1 of 1
3. Emergency Response Phone: 908-354-0210
4. Manifest Tracking Number: 021597107 JJK

5. Generator's Name and Mailing Address
USACE NE DISTRICT (NIKE BATTERY)
696 VIRGINIA ROAD
CONCORD, MA 01742
Generator's Phone: 978-905-2157

Generator's Site Address (if different than mailing address)
USACE NE DISTRICT (NIKE BATTERY)
23A THEODORE FOSTER DRIVE
FOSTER, RI 02857

6. Transporter 1 Company Name: ACV ENVIRONMENTAL SERVICES, INC — U.S. EPA ID Number: NJD003812047

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CYCLE CHEM, INC.
217 SOUTH FIRST STREET
ELIZABETH, NJ 07206
Facility's Phone: 908-355-5800
U.S. EPA ID Number: NJD002200046

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1 NON RCRA NON DOT REGULATED MATERIAL	XXX 2	DM	150	P	27	R015	
	2 NON RCRA NON DOT REGULATED MATERIAL	XXX 11	DM	8000	P	27	R015	
	3							
	4							

14. Special Handling Instructions and Additional Information
D71660 SO 73927 LDR on FileSFSO#

1)Profile#120794 PPE & PLASTIC 2)Profile#120795 NON HAZ DRILL CUTTINGS - IDW WASTE
2x55 11x55

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: John Nama of AECOM — Signature: [signature] — Month 01 Day 14 Year 21
NJ or RI or other non-hazardous non-DOT regulated waste

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kevin E. Dugue — Signature: [signature] — Month 01 Day 14 Year 21
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. H141 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone

4. Manifest Tracking Number: 2020191J-01

5. Generator's Name and Mailing Address
Dept. Army, USACE, New England District
696 Virginia Road
Concord MA 01742
Generator's Phone:

Generator's Site Address (if different than mailing address)
Dept. Army, USACE, Ft. NIKE PR-79 Control Area
23 A Theodore Foster Drive
Foster RI 02857

6. Transporter 1 Company Name
Global Remediation Services Inc
U.S. EPA ID Number: MAC300012903

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Globalcycle, Inc.
700 Richmond Street
East Taunton MA 02718
Facility's Phone: 508-822-1006
U.S. EPA ID Number

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-DOT / NON-RCRA REGULATED LIQUID (Non-Hazardous Waste Water)	1	TT	7986	G	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
1) Profile # D-420-001
PH- ca. 7 Vis.-OK
Plate# 83949

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Brian Nunn for Action of non-DOT regulated material
Signature: [signature]
Month 12 Day 19 Year 2020

15. International Shipments: ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only): Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Global Remediation Tom Pagnotti
Signature: [signature]
Month 12 Day 19 Year 2020
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Paul Mastrodomenico
Signature: [signature]
Month 12 Day 19 Year 2020

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

ITEM WM950 To Reorder Call: Pro's Choice Printing Inc. 1-888-801-1515 www.proschoiceprinting.com

1-DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

3-2010

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone	4. Manifest Tracking Number 2020/912-02

5. Generator's Name and Mailing Address
Dept. Army, USACE, New England District
696 Virginia Road
Concord MA 01742
Generator's Phone

Generator's Site Address (if different than mailing address)
Dept. Army, USACE, Ft. NIKE PR-79 Control Area
23 A Theodore Foster Drive
Foster RI 02857

6. Transporter 1 Company Name: **Global Remediation Services Inc** — U.S. EPA ID Number: MAC300012903

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Globalcycle, Inc.
700 Richmond Street
East Taunton MA 02718
Facility's Phone: 508-822-1006
U.S. EPA ID Number:

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	
	1 **NON-DOT / NON-RCRA REGULATED LIQUID (Non-Hazardous Waste Water)**	1	TT	297	Gal	

13. Special Handling Instructions and Additional Information
1) Profile # D-420-001
PH- 6.7 Vis- OK
Plate# - MA 94892 - VT-3

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: for AECOM — Signature — Month 12 Day 19 Year 20

15. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Ryan C Paquette — Signature — Month 12 Day 19 Year 20
Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: PAUL MASTRODONE — Signature — Month 12 Day 19 Year 20

GENERATOR — TRANSPORTER — DESIGNATED FACILITY

TCMI WM550 To Reorder Call - Pro's Choice Printing, Inc. 1-888-801-1515 www.proschoiceprinting.com

1-DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type (Form designed for use on elite (12-pitch) typewriter)

R-25

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone	4. Manifest Tracking Number 20202812 - 001

5. Generator's Name and Mailing Address
Dept. Army, USACE, New England District
696 Virginia Road
Concord MA 01742
Generator's Phone

Generator's Site Address (if different than mailing address)
Dept. Army, USACE, Fr. NIKE PR-79 Control Area
23 A Theodore Foster Drive
Foster RI 02857

6. Transporter 1 Company Name
Global Remediation Services Inc.
U.S. EPA ID Number: MAC300012903

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Globalcycle, Inc.
700 Richmond Street
East Taunton MA 02718
Facility's Phone: 508-822-1005
U.S. EPA ID Number

9a HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. **NON-DOT / NON-RCRA REGULATED LIQUID (Non-Hazardous Waste Water)**	001	TT	1500	G	
	2.					
	3.					

13. Special Handling Instructions and Additional Information
1) Profile # D-420-001
PH 6.9
Vis OK Profile # 99393 (MA)

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: x John Thomas for MECOM as other or non-RCRA non-DOT regulated matrix
Signature: x
Month 12 Day 22 Year 20

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only). Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Robert Preston
Signature:
Month 12 Day 22 Year 20
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Steve Lester
Signature:
Month 12 Day 23 Year 20

GENERATOR | TRANSPORTER | INT'L | DESIGNATED FACILITY

ITEM# WM550 To Reorder Call Pro's Choice Printing Inc. 1-888-801-1615 www.proschoiceprinting.com

1-DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

MA104388

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: RID987492485
2. Page 1 of: 1
3. Emergency Response Phone: 908-354-0210
4. Manifest Tracking Number: 021597027 JJK

5. Generator's Name and Mailing Address
US ARMY CORPS OF ENGINEERS NE DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742
Generator's Phone: 978-905-2157

Generator's Site Address (if different than mailing address)
DEPARTMENT OF THE ARMY
23A THEODORE FOSTER DRIVE
N.SCITUATE, RI 02857

6. Transporter 1 Company Name: ACV ENVIRONMENTAL SERVICES, INC.
U.S. EPA ID Number: NJD003812047

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CYCLE CHEM, INC.
217 SOUTH FIRST STREET
ELIZABETH, NJ 07206
Facility's Phone: 908-355-5800
U.S. EPA ID Number: NJD002200046

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON DOT NON RCRA REGULATED MATERIAL	XXX	DM	400	P	72	R015	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
D74953 SO 77379 SFSO#
1)Profile#141627 IDW LIQUIDS - PURGE WATER IDW WASTE
X55

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: John Shannon for AECOM as offeror of the non-RCRA non-DOT regulated material
Signature:
Month 02 Day 19 Year 21

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Date leaving U.S.:
Transporter signature (for exports only):

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: John F. Dogu
Signature:
Month 02 Day 19 Year 2021
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

GENERATOR
INT'L
TRANSPORTER
DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Appendix O

Laboratory Analytical Reports

(please see standalone file)

Appendix P

Data Validation Memoranda

Data Validation Report for SO0802

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SO0802
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	April 07, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM
BR-DUP-01-01-R	SO0802-6	Water	Field Duplicate/FD	X
PR79-BR-002-P1-01-R	SO0802-1	Water	Field Sample/N	X
PR79-BR-002-P2-01-R	SO0802-2	Water	Field Sample/N	X
PR79-BR-002-P3-01-R	SO0802-3	Water	Field Sample/N	X
PR79-BR-002-P4-01-R	SO0802-4	Water	Field Sample/N	X
PR79-BR-002-P5-01-R	SO0802-5	Water	Field Sample/N	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SO0802. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 6 results (100.00%) out of the 6 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Results for pentachlorophenol only from re-sampling.

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.

Kristin Rutherford

March 22, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 15, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
BR-DUP-01-01-R (FD)/ SO0802-6	2,4-Dibromophenol	8.200	10 - 130	10 - 130	percent	J/UJ	I	
PR79-BR-002-P3-01-R (N)/ SO0802-3	2,4-Dibromophenol	6.660	10 - 130	10 - 130	percent	J/UJ	I	
PR79-BR-002-P4-01-R (N)/ SO0802-4	2,4-Dibromophenol	5.470	10 - 130	10 - 130	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
BR-DUP-01-01-R	FD	Pentachlorophenol	1.00	0.520 U	0.520 UJ		ug/l	I
PR79-BR-002-P3-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I
PR79-BR-002-P4-01-R	N	Pentachlorophenol	1.00	0.530 U	0.530 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM	**Extraction Method: SW3520**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
BR-DUP-01-01-R	FD	Pentachlorophenol	1.00	0.520 U	0.520 UJ		ug/l	I
PR79-BR-002-P3-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I
PR79-BR-002-P4-01-R	N	Pentachlorophenol	1.00	0.530 U	0.530 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
BR-DUP-01-01-R	FD	Pentachlorophenol	1.00	0.520 U	0.520 X	0.520 UJ	I
PR79-BR-002-P3-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 X	0.470 UJ	I
PR79-BR-002-P4-01-R	N	Pentachlorophenol	1.00	0.530 U	0.530 X	0.530 UJ	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
I	Surrogate recovery outside project limits.

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.9C
Were holding times met?	•			Initial (reported) analysis was within holding time. No qualifications. Samples were re-extracted and re-analyzed outside HT, no actions.
Were all requested target analytes reported?	•			Re-sampling for pentachlorophenol analysis only.
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?		•		Ending CCV 2/25/21 Inst N was analyzed past 12h tune (by 11 minutes) and the lab ran two additional CCVs immediately following.
Was the Calibration within acceptance criteria?	•			RSD and min RF criteria met
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		Ending CCV 2/25/21 Inst N was analyzed past 12h tune (by 11 minutes) and the lab ran two additional CCVs immediately following. Additional CCVs within %D criteria. CCV WG295472-2 03/03/21 Inst N outside criteria for PCP %D (22.4%). No actions since results were not reported from this analysis. Min RF criteria met.
Were Internal Standard retention times and area criteria within method requirements?	•			Phenanthrene-D10 assoc with target analyte PCP within criteria. No quals required for low IS Chrysene-d12 in sample SO0802-5 since it is not assoc with PCP.
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		Surrogate 2,4-DIBROMOPHENOL (assoc with pentachlorophenol analysis) was below criteria in initial analysis of samples SO0802-3, -4, -6. Recoveries were <10% but lower limit of surr DBP is 10%. The samples were re-extracted outside hold time and surr DBP %R was o% in samples S)0802-3RE, -4RE. %R acceptable in -6RE. Based on prof judgment, the results from the initial analysis were reported and qualified (J-/UJ) as estimated since lower limit for this surr is 10%. Qualifications were manually changed from X to J-/UJ. Surr 2-METHYLNAPHTHALENE-D10 was above criteria in sample SO0802-5; no actions since this surr is not associated with acid compound PCP. See outlier report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted with these samples.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not requested.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-002-P1-01-R / BR-DUP-01-01-R both ND
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		CCV outside criteria, samples not reanalyzed. No data were reported from this analysis.
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for TN0323

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	TN0323
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	April 15, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-BR-001-P1-01	TN0323-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-001-P1-01	TN0323-10	Water	Field Sample/N							X		X		X		
PR79-BR-001-P2-01	TN0323-11	Water	Field Sample/N							X		X		X		
PR79-BR-001-P2-01	TN0323-2	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-001-P3-01	TN0323-12	Water	Field Sample/N							X		X		X		
PR79-BR-001-P3-01	TN0323-3	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-004-P1-01	TN0323-15	Water	Field Sample/N							X		X		X		
PR79-BR-004-P1-01	TN0323-8	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-GW-EB02-01	TN0323-14	Water	Equipment Blank/EB							X		X		X		
PR79-GW-EB02-01	TN0323-5	Water	Equipment Blank/EB	X	X	X	X	X	X		X		X		X	X
PR79-GW-FD03-01	TN0323-13	Water	Field Duplicate/FD							X		X		X		
PR79-GW-FD03-01	TN0323-4	Water	Field Duplicate/FD	X	X	X	X	X	X		X		X		X	X
PR79-GW-FD04-01	TN0323-16	Water	Field Duplicate/FD							X		X		X		
PR79-GW-FD04-01	TN0323-9	Water	Field Duplicate/FD	X	X	X	X	X	X		X		X		X	X
TB-GW-20201216-01-01	TN0323-6	Water	Trip Blank/TB												X	
TB-GW-20201216-02-01	TN0323-7	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-BR-001-P1-01	TN0323-1	Water	Field Sample/N	X
PR79-BR-001-P1-01	TN0323-10	Water	Field Sample/N	
PR79-BR-001-P2-01	TN0323-11	Water	Field Sample/N	
PR79-BR-001-P2-01	TN0323-2	Water	Field Sample/N	X
PR79-BR-001-P3-01	TN0323-12	Water	Field Sample/N	
PR79-BR-001-P3-01	TN0323-3	Water	Field Sample/N	X
PR79-BR-004-P1-01	TN0323-15	Water	Field Sample/N	
PR79-BR-004-P1-01	TN0323-8	Water	Field Sample/N	X
PR79-GW-EB02-01	TN0323-14	Water	Equipment Blank/EB	
PR79-GW-EB02-01	TN0323-5	Water	Equipment Blank/EB	X
PR79-GW-FD03-01	TN0323-13	Water	Field Duplicate/FD	
PR79-GW-FD03-01	TN0323-4	Water	Field Duplicate/FD	X
PR79-GW-FD04-01	TN0323-16	Water	Field Duplicate/FD	
PR79-GW-FD04-01	TN0323-9	Water	Field Duplicate/FD	X
TB-GW-20201216-01-01	TN0323-6	Water	Trip Blank/TB	
TB-GW-20201216-02-01	TN0323-7	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) TN0323. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Equipment Blank
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 180 results (20.91%) out of the 861 results (sample and field QC samples) reported are qualified based on review and 1 results (0.12%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Based on comments from the Corps, issues noted in the lab's case narrative that are not part of a Stage 2A validation were addressed in the review checklist and qualifiers were added. Note Review Type (Planned) lists S2BVEM but a S2AVEM validation was performed on this data set. S2BVEM validation performed on SDG TN0371.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
VOCSIMC	No additional comments; see Checklist for detail.

Kristin Rutherford

March 31, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 15, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Alkalinity, Total (as CaCO3)	2500	< 230	< 5000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292296-1 (LB)/ WG292296-1	Alkalinity, Total (as CaCO3)	2500	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-EB02-01	EB	Alkalinity, Total (as CaCO3)	5000	2500 J	4000 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A5310B, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Total Organic Carbon	0.2100	< 0.1	< 1	mg/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for A5310B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Total Organic Carbon	1.00	0.940 J	1.00 U		mg/l	V/L
PR79-BR-001-P2-01	N	Total Organic Carbon	1.00	0.580 J	1.00 U		mg/l	V/L
PR79-GW-FD03-01	FD	Total Organic Carbon	1.00	0.860 J	1.00 U		mg/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A5310B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292139-5 (LB)/ WG292139-5	Total Organic Carbon	0.1300	< 0.1	< 1	mg/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A5310B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Total Organic Carbon	1.00	0.940 J	1.00 U		mg/l	V/L
PR79-BR-001-P2-01	N	Total Organic Carbon	1.00	0.580 J	1.00 U		mg/l	V/L
PR79-GW-EB02-01	EB	Total Organic Carbon	1.00	0.210 J	0.500 U		mg/l	L
PR79-GW-FD03-01	FD	Total Organic Carbon	1.00	0.860 J	1.00 U		mg/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG293283-2 (CV)	Acenaphthene	127.3	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	V2
PR79-BR-001-P2-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	V2
PR79-BR-001-P3-01	N	Acenaphthene	0.190	0.0970 U	0.0970 UJ		ug/l	V2
PR79-BR-004-P1-01	N	Acenaphthene	0.200	0.0980 U	0.0980 UJ		ug/l	V2
PR79-GW-EB02-01	EB	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	V2
PR79-GW-FD03-01	FD	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V2
PR79-GW-FD04-01	FD	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-001-P1-01 (N)/ TN0323-4	1,4-Dioxane (p-Dioxane)	0.3400	< 0.24	< 0.24	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.760	0.760 J		ug/l	D3
PR79-GW-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.230	0.420	0.420 J	-	ug/l	D3/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-FD03-01 (FD)/ TN0323-4	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-GW-FD03-01 (FD)/ TN0323-4	2-Methylnaphthalene -d10	38.50	43 - 92	10 - 92	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.230	0.420	0.420 J	-	ug/l	D3/I
PR79-GW-FD03-01	FD	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V2
PR79-GW-FD03-01	FD	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(a)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(a)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Chrysene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Fluorene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Pentachlorophenol	0.930	0.470 U	0.470 R		ug/l	I
PR79-GW-FD03-01	FD	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Methane	3.300	< 1.9	< 10	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Methane	10.0	5.20 J	10.0 U		ug/l	V/L
PR79-BR-001-P2-01	N	Methane	10.0	2.20 J	5.00 U		ug/l	V/L
PR79-BR-001-P3-01	N	Methane	10.0	2.60 J	5.00 U		ug/l	V/L
PR79-BR-004-P1-01	N	Methane	10.0	7.60 J	10.0 U		ug/l	V/L
PR79-GW-FD03-01	FD	Methane	10.0	3.40 J	5.00 U		ug/l	V/L
PR79-GW-FD04-01	FD	Methane	10.0	6.30 J	10.0 U		ug/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292309-1 (LB)/ WG292309-1	Methane	2.200	< 1.9	< 10	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Methane	10.0	5.20 J	10.0 U		ug/l	V/L
PR79-BR-001-P2-01	N	Methane	10.0	2.20 J	5.00 U		ug/l	V/L
PR79-BR-001-P3-01	N	Methane	10.0	2.60 J	5.00 U		ug/l	V/L
PR79-BR-004-P1-01	N	Methane	10.0	7.60 J	10.0 U		ug/l	V/L
PR79-GW-EB02-01	EB	Methane	10.0	3.30 J	5.00 U		ug/l	L
PR79-GW-FD03-01	FD	Methane	10.0	3.40 J	5.00 U		ug/l	V/L
PR79-GW-FD04-01	FD	Methane	10.0	6.30 J	10.0 U		ug/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-14	Barium	0.2500	< 0.23	< 5	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Zinc	1.100	< 0.72	< 20	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Copper	1.300	< 0.63	< 25	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Magnesium	16.00	< 7.8	< 100	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Aluminum	21.00	< 15	< 300	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Calcium	32.00	< 11	< 100	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Sodium	65.00	< 24	< 1000	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-14	Iron	7.400	< 5.4	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Aluminum	300	23.0 J	100 U		ug/l	V
PR79-BR-001-P1-01	N	Copper	25.0	5.20 J	10.0 U		ug/l	V
PR79-BR-001-P1-01	N	Iron	100	20.0 J	80.0 U		ug/l	V
PR79-BR-001-P1-01	N	Zinc	20.0	19.4 J	20.0 U		ug/l	V
PR79-BR-001-P2-01	N	Aluminum	300	18.0 J	100 U		ug/l	V
PR79-BR-001-P2-01	N	Barium	5.00	4.03 J	5.00 U		ug/l	V
PR79-BR-001-P2-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V
PR79-BR-001-P2-01	N	Iron	100	6.80 J	80.0 U		ug/l	V
PR79-BR-001-P2-01	N	Zinc	20.0	7.81 J	10.0 U		ug/l	V
PR79-BR-001-P3-01	N	Aluminum	300	22.0 J	100 U		ug/l	V
PR79-BR-001-P3-01	N	Copper	25.0	2.70 J	10.0 U		ug/l	V
PR79-BR-001-P3-01	N	Iron	100	21.0 J	80.0 U		ug/l	V
PR79-BR-001-P3-01	N	Zinc	20.0	7.36 J	10.0 U		ug/l	V
PR79-BR-004-P1-01	N	Aluminum	300	33.0 J	100 U		ug/l	V
PR79-BR-004-P1-01	N	Copper	25.0	2.60 J	10.0 U		ug/l	V
PR79-BR-004-P1-01	N	Iron	100	28.0 J	80.0 U		ug/l	V
PR79-BR-004-P1-01	N	Zinc	20.0	3.90 J	10.0 U		ug/l	V
PR79-GW-FD03-01	FD	Aluminum	300	28.0 J	100 U		ug/l	V
PR79-GW-FD03-01	FD	Copper	25.0	3.40 J	10.0 U		ug/l	V
PR79-GW-FD03-01	FD	Iron	100	49.0 J	80.0 U		ug/l	V
PR79-GW-FD03-01	FD	Zinc	20.0	6.20 J	10.0 U		ug/l	V

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD04-01	FD	Aluminum	300	18.0 J	100 U		ug/l	V
PR79-GW-FD04-01	FD	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-GW-FD04-01	FD	Iron	100	14.0 J	80.0 U		ug/l	V
PR79-GW-FD04-01	FD	Zinc	20.0	4.60 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL21ICW3 (LB)	Sodium	28.00	< 24	< 1000	ug/l	None/None	L	
PBWNL21ICW3 (LB)	Potassium	52.00	< 41	< 1000	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-EB02-01	EB	Sodium	1000	65.0 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Calcium	14.00	< 11	< 100	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Aluminum	36.00	< 15	< 300	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Sodium	41.00	< 24	< 1000	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Magnesium	8.400	< 7.8	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Aluminum	300	23.0 J	100 U		ug/l	V
PR79-BR-001-P2-01	N	Aluminum	300	18.0 J	100 U		ug/l	V
PR79-BR-001-P3-01	N	Aluminum	300	22.0 J	100 U		ug/l	V
PR79-BR-004-P1-01	N	Aluminum	300	33.0 J	100 U		ug/l	V
PR79-GW-FD03-01	FD	Aluminum	300	28.0 J	100 U		ug/l	V
PR79-GW-FD04-01	FD	Aluminum	300	18.0 J	100 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL21ICW3 (LB)/ PBWNL21ICW3	Sodium	28.00	< 24	< 1000	ug/l	U/None	L	
PBWNL21ICW3 (LB)/ PBWNL21ICW3	Potassium	52.00	< 41	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-EB02-01	EB	Sodium	1000	41.0 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-14	Nickel	0.1900	< 0.15	< 2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Nickel	2.00	0.850 J	1.20 U		ug/l	V
PR79-BR-001-P2-01	N	Nickel	2.00	0.440 J	1.20 U		ug/l	V
PR79-BR-001-P3-01	N	Nickel	2.00	0.880 J	1.20 U		ug/l	V
PR79-BR-004-P1-01	N	Nickel	2.00	0.660 J	1.20 U		ug/l	V
PR79-GW-FD03-01	FD	Nickel	2.00	0.590 J	1.20 U		ug/l	V
PR79-GW-FD04-01	FD	Nickel	2.00	0.970 J	1.20 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-001-P1-01 (N)/ TN0323-13	Lead	1.060	< 1	< 1	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Lead	1.00	2.75	2.75		ug/l	D3
PR79-GW-FD03-01	FD	Lead	1.00	1.69	1.69		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL21IMW3 (LB)	Cadmium	0.05200	< 0.029	< 1	ug/l	None/None	L	
PBWNL21IMW3 (LB)	Beryllium	0.05200	< 0.23	< 5	ug/l	None/None	L	
PBWNL21IMW3 (LB)	Cobalt	0.06000	< 0.06	< 1	ug/l	None/None	L	
PBWNL21IMW3 (LB)	Antimony	0.1800	< 0.055	< 1	ug/l	None/None	L	
PBWNL21IMW3 (LB)	Lead	0.2000	< 0.075	< 1	ug/l	None/None	L	
PBWNL21IMW3 (LB)	Thallium	0.2200	< 0.06	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Antimony	1.00	0.470 J	0.500 U		ug/l	L
PR79-BR-001-P1-01	N	Cadmium	1.00	0.0410 J	0.200 U		ug/l	L
PR79-BR-001-P1-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-BR-001-P2-01	N	Antimony	1.00	0.180 J	0.500 U		ug/l	L
PR79-BR-001-P3-01	N	Antimony	1.00	0.668 J	1.00 U		ug/l	L
PR79-BR-001-P3-01	N	Beryllium	1.00	0.0470 J	0.200 U		ug/l	L
PR79-BR-001-P3-01	N	Cadmium	1.00	0.0500 J	0.200 U		ug/l	L
PR79-BR-001-P3-01	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	L
PR79-BR-004-P1-01	N	Antimony	1.00	0.853 J	1.00 U		ug/l	L
PR79-BR-004-P1-01	N	Cobalt	1.00	0.190 J	0.300 U		ug/l	L
PR79-GW-EB02-01	EB	Lead	1.00	0.0980 J	0.500 U		ug/l	L
PR79-GW-FD03-01	FD	Antimony	1.00	0.490 J	0.500 U		ug/l	L
PR79-GW-FD03-01	FD	Cobalt	1.00	0.110 J	0.300 U		ug/l	L
PR79-GW-FD04-01	FD	Antimony	1.00	0.650 J	1.00 U		ug/l	L
PR79-GW-FD04-01	FD	Cobalt	1.00	0.160 J	0.300 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL21IMW3 (LB)/ PBWNL21IMW3	Cadmium	0.05200	< 0.03	< 1	ug/l	U/None	L	
PBWNL21IMW3 (LB)/ PBWNL21IMW3	Beryllium	0.05200	< 0.034	< 1	ug/l	U/None	L	
PBWNL21IMW3 (LB)/ PBWNL21IMW3	Cobalt	0.07600	< 0.061	< 1	ug/l	U/None	L	
PBWNL21IMW3 (LB)/ PBWNL21IMW3	Antimony	0.1800	< 0.054	< 1	ug/l	U/None	L	
PBWNL21IMW3 (LB)/ PBWNL21IMW3	Lead	0.2000	< 0.074	< 1	ug/l	U/None	L	
PBWNL21IMW3 (LB)/ PBWNL21IMW3	Thallium	0.2200	< 0.061	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Antimony	1.00	0.530 J	1.00 U		ug/l	L
PR79-BR-001-P1-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-BR-001-P2-01	N	Antimony	1.00	0.170 J	0.500 U		ug/l	L
PR79-BR-001-P3-01	N	Antimony	1.00	0.723 J	1.00 U		ug/l	L
PR79-BR-001-P3-01	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	L
PR79-BR-004-P1-01	N	Antimony	1.00	0.843 J	1.00 U		ug/l	L
PR79-BR-004-P1-01	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	L
PR79-GW-FD03-01	FD	Antimony	1.00	0.561 J	1.00 U		ug/l	L
PR79-GW-FD03-01	FD	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-GW-FD04-01	FD	Antimony	1.00	0.906 J	1.00 U		ug/l	L
PR79-GW-FD04-01	FD	Cadmium	1.00	0.0400 J	0.200 U		ug/l	L
PR79-GW-FD04-01	FD	Cobalt	1.00	0.210 J	0.300 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-14	Mercury	0.02500	< 0.013	< 0.2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Mercury	0.200	0.0130 J	0.100 U		ug/l	V/L
PR79-BR-004-P1-01	N	Mercury	0.200	0.0150 J	0.100 U		ug/l	V/L
PR79-GW-FD03-01	FD	Mercury	0.200	0.0270 J	0.100 U		ug/l	V/L
PR79-GW-FD04-01	FD	Mercury	0.200	0.0280 J	0.100 U		ug/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL29HGW1 (LB)	Mercury	0.02600	< 0.013	< 0.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Mercury	0.200	0.0470 J	0.100 U		ug/l	L
PR79-BR-001-P2-01	N	Mercury	0.200	0.0310 J	0.100 U		ug/l	L
PR79-BR-001-P3-01	N	Mercury	0.200	0.0350 J	0.100 U		ug/l	L
PR79-BR-004-P1-01	N	Mercury	0.200	0.0320 J	0.100 U		ug/l	L
PR79-GW-EB02-01	EB	Mercury	0.200	0.0250 J	0.100 U		ug/l	L
PR79-GW-FD03-01	FD	Mercury	0.200	0.0320 J	0.100 U		ug/l	L
PR79-GW-FD04-01	FD	Mercury	0.200	0.0330 J	0.100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL29HGW1 (LB)/ PBWNL29HGW1	Mercury	0.02600	< 0.013	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Mercury	0.200	0.0130 J	0.100 U		ug/l	V/L
PR79-BR-004-P1-01	N	Mercury	0.200	0.0150 J	0.100 U		ug/l	V/L
PR79-GW-FD03-01	FD	Mercury	0.200	0.0270 J	0.100 U		ug/l	V/L
PR79-GW-FD04-01	FD	Mercury	0.200	0.0280 J	0.100 U		ug/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292471-4 (CV)	Bromomethane	77.50	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-001-P2-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-001-P3-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-004-P1-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-GW-FD03-01	FD	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-GW-FD04-01	FD	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Methylene chloride	1.700	< 1.1	< 5	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Acetone	4.500	< 2.2	< 5	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Acetone	5.00	6.00	6.00 J	+	ug/l	V
PR79-BR-001-P2-01	N	Acetone	5.00	3.70 J	5.00 U		ug/l	V
PR79-BR-001-P3-01	N	Acetone	5.00	4.50 J	5.00 U		ug/l	V
PR79-BR-004-P1-01	N	Acetone	5.00	9.60	9.60 J	+	ug/l	V/D3
PR79-GW-FD03-01	FD	Acetone	5.00	5.80	5.80 J	+	ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-004-P1-01 (N)/ TN0323-9	Acetone	9.600	< 5	< 5	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-004-P1-01	N	Acetone	5.00	9.60	9.60 J	+	ug/l	V/D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292471-2 (LB)/ WG292471-2	Methylene chloride	2.000	< 1.1	< 5	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	1,2-Dichloroethane-d4	120.0	81 - 118	10 - 118	percent	J/None	I	
TB-GW-20201216-01-01 (TB)/ TN0323-6	1,2-Dichloroethane-d4	121.0	81 - 118	10 - 118	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-EB02-01	EB	Acetone	5.00	4.50 J	4.50 J	+	ug/l	I/TR
PR79-GW-EB02-01	EB	Methylene chloride	5.00	1.70 J	1.70 J	+	ug/l	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Chloride	110.0	< 99	< 2000	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Nitrite (as N)	15.00	< 9.2	< 50	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Sulfate	270.0	< 64	< 1000	ug/l	U/None	V	
PR79-GW-EB02-01 (EB)/ TN0323-5	Nitrate (as N)	45.00	< 17	< 50	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	V/L
PR79-BR-001-P1-01	N	Nitrite (as N)	50.0	14.0 J	25.0 U		ug/l	V
PR79-BR-001-P2-01	N	Nitrate (as N)	50.0	140	140 J	+	ug/l	V/L
PR79-BR-001-P2-01	N	Nitrite (as N)	50.0	12.0 J	25.0 U		ug/l	V
PR79-BR-001-P3-01	N	Nitrate (as N)	50.0	73.0	73.0 J	+	ug/l	V/L
PR79-BR-001-P3-01	N	Nitrite (as N)	50.0	13.0 J	25.0 U		ug/l	V
PR79-BR-004-P1-01	N	Nitrate (as N)	50.0	210	210 J	+	ug/l	V
PR79-BR-004-P1-01	N	Nitrite (as N)	50.0	74.0	74.0 J	+	ug/l	V
PR79-GW-FD03-01	FD	Nitrate (as N)	50.0	140	140 J	+	ug/l	V/L
PR79-GW-FD03-01	FD	Nitrite (as N)	50.0	14.0 J	25.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292517-1 (LB)/ WG292517-1	Nitrate (as N)	30.00	< 17	< 50	ug/l	U/None	L	
WG292517-1 (LB)/ WG292517-1	Sulfate	94.00	< 64	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	V/L
PR79-BR-001-P2-01	N	Nitrate (as N)	50.0	140	140 J	+	ug/l	V/L
PR79-BR-001-P3-01	N	Nitrate (as N)	50.0	73.0	73.0 J	+	ug/l	V/L
PR79-GW-EB02-01	EB	Nitrate (as N)	50.0	45.0 J	50.0 U		ug/l	L
PR79-GW-EB02-01	EB	Sulfate	1000	270 J	500 U		ug/l	L
PR79-GW-FD03-01	FD	Nitrate (as N)	50.0	140	140 J	+	ug/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-004-P1-01 (N)/ TN0323-8		290.9	< 48	< 96	hours	J/X	H1	Test Exceeds UCL
PR79-GW-FD04-01 (FD)/ TN0323-9		291.1	< 48	< 96	hours	J/X	H1	Test Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-EB02-01 (EB)/ TN0323-5	Chloroform	0.04900	< 0.0061	< 0.1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-004-P1-01	N	Chloroform	0.100	0.220	0.220 J	+	ug/l	V/D3/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-004-P1-01 (N)/ TN0323-9	Chloroform	0.1400	< 0.1	< 0.1	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-004-P1-01	N	Chloroform	0.100	0.220	0.220 J	+	ug/l	V/D3/V1
PR79-GW-FD04-01	FD	Chloroform	0.100	0.360	0.360 J	+	ug/l	D3/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292601-6 (IV)	Chloroform	121.7	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P2-01	N	Chloroform	0.100	0.400	0.400 J	+	ug/l	V1
PR79-BR-001-P3-01	N	Chloroform	0.500	4.10	4.10 J	+	ug/l	V1
PR79-BR-004-P1-01	N	Chloroform	0.100	0.220	0.220 J	+	ug/l	V/D3/V1
PR79-GW-FD03-01	FD	Chloroform	0.100	0.290	0.290 J	+	ug/l	V1
PR79-GW-FD04-01	FD	Chloroform	0.100	0.360	0.360 J	+	ug/l	D3/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
1,4-DICHLOROBENZENE-D4/ TN0323-1	1,2,3-Trichlorobenzene	5940	7416 - 29666	2967 - 29666	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ TN0323-1	1,2,4-Trichlorobenzene	5940	7416 - 29666	2967 - 29666	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ TN0323-5	1,2,3-Trichlorobenzene	6368	7416 - 29666	2967 - 29666	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ TN0323-5	1,2,4-Trichlorobenzene	6368	7416 - 29666	2967 - 29666	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ TN0323-7	1,2,3-Trichlorobenzene	6002	7416 - 29666	2967 - 29666	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ TN0323-7	1,2,4-Trichlorobenzene	6002	7416 - 29666	2967 - 29666	area	J/UJ	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-BR-001-P1-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-GW-EB02-01	EB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-GW-EB02-01	EB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-GW-20201216-02-01	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-GW-20201216-02-01	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-001-P1-01 (N)/ TN0323-1	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	59.80	70 - 130	10 - 130	percent	J/UJ	I	
PR79-GW-EB02-01 (EB)/ TN0323-5	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	61.90	70 - 130	10 - 130	percent	J/UJ	I	
TB-GW-20201216-02-01 (TB)/ TN0323-7	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	62.40	70 - 130	10 - 130	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-BR-001-P1-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-BR-001-P1-01	N	Benzene	0.0500	0.0180 J	0.0180 J	-	ug/l	I/TR
PR79-BR-001-P1-01	N	Chloroform	0.100	0.300	0.300 J	-	ug/l	I
PR79-BR-001-P1-01	N	Trichloroethene (TCE)	0.0500	1.00	1.00 J	-	ug/l	I
PR79-BR-001-P1-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-GW-EB02-01	EB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-GW-EB02-01	EB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-GW-EB02-01	EB	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-GW-EB02-01	EB	Chloroform	0.100	0.0490 J	0.0490 J	-	ug/l	I/TR
PR79-GW-EB02-01	EB	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-GW-EB02-01	EB	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
TB-GW-20201216-02-01	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-GW-20201216-02-01	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-GW-20201216-02-01	TB	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
TB-GW-20201216-02-01	TB	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	I
TB-GW-20201216-02-01	TB	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ		ug/l	I
TB-GW-20201216-02-01	TB	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-001-P2-01 (N)/ TN0323-2		14.25	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
PR79-BR-001-P3-01 (N)/ TN0323-3		14.19	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: A2320B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-EB02-01	EB	Alkalinity, Total (as CaCO3)	5000	2500 J	4000 U		ug/l	L

Test Method: A5310B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Total Organic Carbon	1.00	0.940 J	1.00 U		mg/l	V/L
PR79-BR-001-P2-01	N	Total Organic Carbon	1.00	0.580 J	1.00 U		mg/l	V/L
PR79-GW-EB02-01	EB	Total Organic Carbon	1.00	0.210 J	0.500 U		mg/l	L
PR79-GW-FD03-01	FD	Total Organic Carbon	1.00	0.860 J	1.00 U		mg/l	V/L

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	V2
PR79-BR-001-P1-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.760	0.760 J		ug/l	D3
PR79-BR-001-P2-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	V2
PR79-BR-001-P3-01	N	Acenaphthene	0.190	0.0970 U	0.0970 UJ		ug/l	V2
PR79-BR-004-P1-01	N	Acenaphthene	0.200	0.0980 U	0.0980 UJ		ug/l	V2
PR79-GW-EB02-01	EB	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	V2
PR79-GW-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.230	0.420	0.420 J	-	ug/l	D3/I
PR79-GW-FD03-01	FD	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V2
PR79-GW-FD03-01	FD	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(a)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(a)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Chrysene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Fluorene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Pentachlorophenol	0.930	0.470 U	0.470 R		ug/l	I
PR79-GW-FD03-01	FD	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD03-01	FD	Pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-GW-FD04-01	FD	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	V2

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Methane	10.0	5.20 J	10.0 U		ug/l	V/L

Table of All Qualified Results

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P2-01	N	Methane	10.0	2.20 J	5.00 U		ug/l	V/L
PR79-BR-001-P3-01	N	Methane	10.0	2.60 J	5.00 U		ug/l	V/L
PR79-BR-004-P1-01	N	Methane	10.0	7.60 J	10.0 U		ug/l	V/L
PR79-GW-EB02-01	EB	Methane	10.0	3.30 J	5.00 U		ug/l	L
PR79-GW-FD03-01	FD	Methane	10.0	3.40 J	5.00 U		ug/l	V/L
PR79-GW-FD04-01	FD	Methane	10.0	6.30 J	10.0 U		ug/l	V/L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Copper	25.0	5.20 J	10.0 U		ug/l	V
PR79-BR-001-P1-01	N	Iron	100	20.0 J	80.0 U		ug/l	V
PR79-BR-001-P1-01	N	Zinc	20.0	19.4 J	20.0 U		ug/l	V
PR79-BR-001-P2-01	N	Aluminum	300	18.0 J	100 U		ug/l	V
PR79-BR-001-P2-01	N	Barium	5.00	4.03 J	5.00 U		ug/l	V
PR79-BR-001-P2-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V
PR79-BR-001-P2-01	N	Zinc	20.0	7.81 J	10.0 U		ug/l	V
PR79-BR-001-P3-01	N	Aluminum	300	22.0 J	100 U		ug/l	V
PR79-BR-001-P3-01	N	Copper	25.0	2.70 J	10.0 U		ug/l	V
PR79-BR-001-P3-01	N	Zinc	20.0	7.36 J	10.0 U		ug/l	V
PR79-BR-004-P1-01	N	Aluminum	300	33.0 J	100 U		ug/l	V
PR79-BR-004-P1-01	N	Copper	25.0	2.60 J	10.0 U		ug/l	V
PR79-BR-004-P1-01	N	Zinc	20.0	3.90 J	10.0 U		ug/l	V
PR79-GW-EB02-01	EB	Sodium	1000	65.0 J	500 U		ug/l	L
PR79-GW-FD03-01	FD	Copper	25.0	3.40 J	10.0 U		ug/l	V
PR79-GW-FD03-01	FD	Zinc	20.0	6.20 J	10.0 U		ug/l	V
PR79-GW-FD04-01	FD	Aluminum	300	18.0 J	100 U		ug/l	V
PR79-GW-FD04-01	FD	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-GW-FD04-01	FD	Zinc	20.0	4.60 J	10.0 U		ug/l	V

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Aluminum	300	23.0 J	100 U		ug/l	V
PR79-BR-001-P1-01	N	Copper	25.0	5.70 J	10.0 U		ug/l	V
PR79-BR-001-P1-01	N	Iron	100	26.0 J	80.0 U		ug/l	V
PR79-BR-001-P2-01	N	Aluminum	300	16.0 J	100 U		ug/l	V
PR79-BR-001-P2-01	N	Barium	5.00	3.60 J	5.00 U		ug/l	V
PR79-BR-001-P2-01	N	Copper	25.0	4.80 J	10.0 U		ug/l	V
PR79-BR-001-P2-01	N	Iron	100	6.80 J	80.0 U		ug/l	V
PR79-BR-001-P2-01	N	Zinc	20.0	17.6 J	20.0 U		ug/l	V
PR79-BR-001-P3-01	N	Aluminum	300	21.0 J	100 U		ug/l	V
PR79-BR-001-P3-01	N	Copper	25.0	6.20 J	10.0 U		ug/l	V
PR79-BR-001-P3-01	N	Iron	100	21.0 J	80.0 U		ug/l	V
PR79-BR-001-P3-01	N	Zinc	20.0	10.4 J	20.0 U		ug/l	V

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-004-P1-01	N	Aluminum	300	35.0 J	100 U		ug/l	V
PR79-BR-004-P1-01	N	Copper	25.0	3.50 J	10.0 U		ug/l	V
PR79-BR-004-P1-01	N	Iron	100	28.0 J	80.0 U		ug/l	V
PR79-BR-004-P1-01	N	Zinc	20.0	8.47 J	10.0 U		ug/l	V
PR79-GW-EB02-01	EB	Sodium	1000	41.0 J	500 U		ug/l	L
PR79-GW-FD03-01	FD	Aluminum	300	28.0 J	100 U		ug/l	V
PR79-GW-FD03-01	FD	Copper	25.0	7.32 J	10.0 U		ug/l	V
PR79-GW-FD03-01	FD	Iron	100	49.0 J	80.0 U		ug/l	V
PR79-GW-FD04-01	FD	Aluminum	300	23.0 J	100 U		ug/l	V
PR79-GW-FD04-01	FD	Copper	25.0	2.70 J	10.0 U		ug/l	V
PR79-GW-FD04-01	FD	Iron	100	14.0 J	80.0 U		ug/l	V
PR79-GW-FD04-01	FD	Zinc	20.0	3.90 J	10.0 U		ug/l	V

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Antimony	1.00	0.470 J	0.500 U		ug/l	L
PR79-BR-001-P1-01	N	Cadmium	1.00	0.0410 J	0.200 U		ug/l	L
PR79-BR-001-P1-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-BR-001-P1-01	N	Lead	1.00	2.75	2.75		ug/l	D3
PR79-BR-001-P1-01	N	Nickel	2.00	0.850 J	1.20 U		ug/l	V
PR79-BR-001-P2-01	N	Antimony	1.00	0.180 J	0.500 U		ug/l	L
PR79-BR-001-P2-01	N	Nickel	2.00	0.440 J	1.20 U		ug/l	V
PR79-BR-001-P3-01	N	Antimony	1.00	0.668 J	1.00 U		ug/l	L
PR79-BR-001-P3-01	N	Beryllium	1.00	0.0470 J	0.200 U		ug/l	L
PR79-BR-001-P3-01	N	Cadmium	1.00	0.0500 J	0.200 U		ug/l	L
PR79-BR-001-P3-01	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	L
PR79-BR-001-P3-01	N	Nickel	2.00	0.880 J	1.20 U		ug/l	V
PR79-BR-004-P1-01	N	Antimony	1.00	0.853 J	1.00 U		ug/l	L
PR79-BR-004-P1-01	N	Cobalt	1.00	0.190 J	0.300 U		ug/l	L
PR79-BR-004-P1-01	N	Nickel	2.00	0.660 J	1.20 U		ug/l	V
PR79-GW-EB02-01	EB	Lead	1.00	0.0980 J	0.500 U		ug/l	L
PR79-GW-FD03-01	FD	Antimony	1.00	0.490 J	0.500 U		ug/l	L
PR79-GW-FD03-01	FD	Cobalt	1.00	0.110 J	0.300 U		ug/l	L
PR79-GW-FD03-01	FD	Lead	1.00	1.69	1.69		ug/l	D3
PR79-GW-FD03-01	FD	Nickel	2.00	0.590 J	1.20 U		ug/l	V
PR79-GW-FD04-01	FD	Antimony	1.00	0.650 J	1.00 U		ug/l	L
PR79-GW-FD04-01	FD	Cobalt	1.00	0.160 J	0.300 U		ug/l	L
PR79-GW-FD04-01	FD	Nickel	2.00	0.970 J	1.20 U		ug/l	V

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Antimony	1.00	0.530 J	1.00 U		ug/l	L
PR79-BR-001-P1-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Nickel	2.00	0.260 J	1.20 U		ug/l	V
PR79-BR-001-P2-01	N	Antimony	1.00	0.170 J	0.500 U		ug/l	L
PR79-BR-001-P3-01	N	Antimony	1.00	0.723 J	1.00 U		ug/l	L
PR79-BR-001-P3-01	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	L
PR79-BR-001-P3-01	N	Nickel	2.00	0.430 J	1.20 U		ug/l	V
PR79-BR-004-P1-01	N	Antimony	1.00	0.843 J	1.00 U		ug/l	L
PR79-BR-004-P1-01	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	L
PR79-BR-004-P1-01	N	Nickel	2.00	0.410 J	1.20 U		ug/l	V
PR79-GW-FD03-01	FD	Antimony	1.00	0.561 J	1.00 U		ug/l	L
PR79-GW-FD03-01	FD	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-GW-FD03-01	FD	Nickel	2.00	1.00 J	1.20 U		ug/l	V
PR79-GW-FD04-01	FD	Antimony	1.00	0.906 J	1.00 U		ug/l	L
PR79-GW-FD04-01	FD	Cadmium	1.00	0.0400 J	0.200 U		ug/l	L
PR79-GW-FD04-01	FD	Cobalt	1.00	0.210 J	0.300 U		ug/l	L
PR79-GW-FD04-01	FD	Nickel	2.00	0.850 J	1.20 U		ug/l	V

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Mercury	0.200	0.0470 J	0.100 U		ug/l	L
PR79-BR-001-P2-01	N	Mercury	0.200	0.0310 J	0.100 U		ug/l	L
PR79-BR-001-P3-01	N	Mercury	0.200	0.0350 J	0.100 U		ug/l	L
PR79-BR-004-P1-01	N	Mercury	0.200	0.0320 J	0.100 U		ug/l	L
PR79-GW-EB02-01	EB	Mercury	0.200	0.0250 J	0.100 U		ug/l	L
PR79-GW-FD03-01	FD	Mercury	0.200	0.0320 J	0.100 U		ug/l	L
PR79-GW-FD04-01	FD	Mercury	0.200	0.0330 J	0.100 U		ug/l	L

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Mercury	0.200	0.0130 J	0.100 U		ug/l	V/L
PR79-BR-004-P1-01	N	Mercury	0.200	0.0150 J	0.100 U		ug/l	V/L
PR79-GW-FD03-01	FD	Mercury	0.200	0.0270 J	0.100 U		ug/l	V/L
PR79-GW-FD04-01	FD	Mercury	0.200	0.0280 J	0.100 U		ug/l	V/L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-001-P1-01	N	Acetone	5.00	6.00	6.00 J	+	ug/l	V
PR79-BR-001-P2-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-001-P2-01	N	Acetone	5.00	3.70 J	5.00 U		ug/l	V
PR79-BR-001-P3-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-001-P3-01	N	Acetone	5.00	4.50 J	5.00 U		ug/l	V
PR79-BR-004-P1-01	N	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-BR-004-P1-01	N	Acetone	5.00	9.60	9.60 J	+	ug/l	V/D3
PR79-GW-EB02-01	EB	Acetone	5.00	4.50 J	4.50 J	+	ug/l	I/TR

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-EB02-01	EB	Methylene chloride	5.00	1.70 J	1.70 J	+	ug/l	I/TR
PR79-GW-FD03-01	FD	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2
PR79-GW-FD03-01	FD	Acetone	5.00	5.80	5.80 J	+	ug/l	V
PR79-GW-FD04-01	FD	Bromomethane	2.00	1.00 U	1.00 UJ		ug/l	V2

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	Nitrite (as N)	50.0	14.0 J	25.0 U		ug/l	V
PR79-BR-001-P1-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	V/L
PR79-BR-001-P2-01	N	Nitrite (as N)	50.0	12.0 J	25.0 U		ug/l	V
PR79-BR-001-P2-01	N	Nitrate (as N)	50.0	140	140 J	+	ug/l	V/L
PR79-BR-001-P3-01	N	Nitrite (as N)	50.0	13.0 J	25.0 U		ug/l	V
PR79-BR-001-P3-01	N	Nitrate (as N)	50.0	73.0	73.0 J	+	ug/l	V/L
PR79-BR-004-P1-01	N	Nitrate (as N)	50.0	210	210 J	+	ug/l	V
PR79-BR-004-P1-01	N	Nitrite (as N)	50.0	74.0	74.0 J	+	ug/l	V
PR79-GW-EB02-01	EB	Nitrate (as N)	50.0	45.0 J	50.0 U		ug/l	L
PR79-GW-EB02-01	EB	Sulfate	1000	270 J	500 U		ug/l	L
PR79-GW-FD03-01	FD	Nitrite (as N)	50.0	14.0 J	25.0 U		ug/l	V
PR79-GW-FD03-01	FD	Nitrate (as N)	50.0	140	140 J	+	ug/l	V/L

Test Method: VOCSIMC Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-001-P1-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-BR-001-P1-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-BR-001-P1-01	N	Benzene	0.0500	0.0180 J	0.0180 J	-	ug/l	I/TR
PR79-BR-001-P1-01	N	Chloroform	0.100	0.300	0.300 J	-	ug/l	I
PR79-BR-001-P1-01	N	Trichloroethene (TCE)	0.0500	1.00	1.00 J	-	ug/l	I
PR79-BR-001-P1-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-BR-001-P2-01	N	Chloroform	0.100	0.400	0.400 J	+	ug/l	V1
PR79-BR-001-P3-01	N	Chloroform	0.500	4.10	4.10 J	+	ug/l	V1
PR79-BR-004-P1-01	N	Chloroform	0.100	0.220	0.220 J	+	ug/l	V/D3/V1
PR79-GW-EB02-01	EB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-GW-EB02-01	EB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-GW-EB02-01	EB	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-GW-EB02-01	EB	Chloroform	0.100	0.0490 J	0.0490 J	-	ug/l	I/TR
PR79-GW-EB02-01	EB	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-GW-EB02-01	EB	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-GW-FD03-01	FD	Chloroform	0.100	0.290	0.290 J	+	ug/l	V1
PR79-GW-FD04-01	FD	Chloroform	0.100	0.360	0.360 J	+	ug/l	D3/V1
TB-GW-20201216-02-01	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-GW-20201216-02-01	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-GW-20201216-02-01	TB	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
TB-GW-20201216-02-01	TB	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	I

Table of All Qualified Results

Test Method: VOCSIMC	**Extraction Method: SW5030**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
TB-GW-20201216-02-01	TB	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ		ug/l	I
TB-GW-20201216-02-01	TB	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-001-P1-01	N	Acenaphthene	0.190	0.0960 U	0.0960 U	0.0960 UJ	V2
PR79-BR-001-P2-01	N	Acenaphthene	0.190	0.0960 U	0.0960 U	0.0960 UJ	V2
PR79-BR-001-P3-01	N	Acenaphthene	0.190	0.0970 U	0.0970 U	0.0970 UJ	V2
PR79-BR-004-P1-01	N	Acenaphthene	0.200	0.0980 U	0.0980 U	0.0980 UJ	V2
PR79-GW-EB02-01	EB	Acenaphthene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V2
PR79-GW-FD03-01	FD	Acenaphthene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/V2
PR79-GW-FD03-01	FD	Pentachlorophenol	0.930	0.470 U	0.470 X	0.470 R	I
PR79-GW-FD04-01	FD	Acenaphthene	0.190	0.0960 U	0.0960 U	0.0960 UJ	V2

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-GW-EB02-01	EB	Potassium	1000	500 U	500 U	500	
PR79-GW-EB02-01	EB	Sodium	1000	65.0 J	65.0 J	500 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-001-P1-01	N	Antimony	1.00	0.470 J	0.470 J	0.500 U	L
PR79-BR-001-P1-01	N	Cadmium	1.00	0.0410 J	0.0410 J	0.200 U	L
PR79-BR-001-P1-01	N	Cobalt	1.00	0.120 J	0.120 J	0.300 U	L
PR79-BR-001-P1-01	N	Lead	1.00	2.75	2.75 J	2.75	D3
PR79-BR-001-P1-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-BR-001-P2-01	N	Antimony	1.00	0.180 J	0.180 J	0.500 U	L
PR79-BR-001-P2-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-BR-001-P3-01	N	Antimony	1.00	0.668 J	0.668 J	1.00 U	L
PR79-BR-001-P3-01	N	Beryllium	1.00	0.0470 J	0.0470 J	0.200 U	L
PR79-BR-001-P3-01	N	Cadmium	1.00	0.0500 J	0.0500 J	0.200 U	L
PR79-BR-001-P3-01	N	Cobalt	1.00	0.150 J	0.150 J	0.300 U	L
PR79-BR-001-P3-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-BR-004-P1-01	N	Antimony	1.00	0.853 J	0.853 J	1.00 U	L
PR79-BR-004-P1-01	N	Cobalt	1.00	0.190 J	0.190 J	0.300 U	L
PR79-BR-004-P1-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-GW-EB02-01	EB	Lead	1.00	0.0980 J	0.0980 J	0.500 U	L
PR79-GW-EB02-01	EB	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-GW-FD03-01	FD	Antimony	1.00	0.490 J	0.490 J	0.500 U	L
PR79-GW-FD03-01	FD	Cobalt	1.00	0.110 J	0.110 J	0.300 U	L
PR79-GW-FD03-01	FD	Lead	1.00	1.69	1.69 J	1.69	D3
PR79-GW-FD03-01	FD	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-GW-FD04-01	FD	Antimony	1.00	0.650 J	0.650 J	1.00 U	L
PR79-GW-FD04-01	FD	Cobalt	1.00	0.160 J	0.160 J	0.300 U	L
PR79-GW-FD04-01	FD	Thallium	1.00	0.400 U	0.400 U	0.400	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-001-P1-01	N	Mercury	0.200	0.0470 J	0.100 U	0.100 U	L
PR79-BR-001-P2-01	N	Mercury	0.200	0.0310 J	0.100 U	0.100 U	L
PR79-BR-001-P3-01	N	Mercury	0.200	0.0350 J	0.100 U	0.100 U	L
PR79-BR-004-P1-01	N	Mercury	0.200	0.0320 J	0.100 U	0.100 U	L
PR79-GW-EB02-01	EB	Mercury	0.200	0.0250 J	0.0250 J	0.100 U	L
PR79-GW-FD03-01	FD	Mercury	0.200	0.0320 J	0.100 U	0.100 U	L
PR79-GW-FD04-01	FD	Mercury	0.200	0.0330 J	0.100 U	0.100 U	L

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-001-P1-01	N	Bromomethane	2.00	1.00 U	1.00 U	1.00 UJ	V2
PR79-BR-001-P2-01	N	Bromomethane	2.00	1.00 U	1.00 U	1.00 UJ	V2
PR79-BR-001-P3-01	N	Bromomethane	2.00	1.00 U	1.00 U	1.00 UJ	V2
PR79-BR-004-P1-01	N	Bromomethane	2.00	1.00 U	1.00 U	1.00 UJ	V2
PR79-GW-FD03-01	FD	Bromomethane	2.00	1.00 U	1.00 U	1.00 UJ	V2
PR79-GW-FD04-01	FD	Bromomethane	2.00	1.00 U	1.00 U	1.00 UJ	V2

Modified Qualifiers for test method SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-004-P1-01	N	Chloride	10000	46000	46000 J	46000	
PR79-BR-004-P1-01	N	Nitrate (as N)	50.0	210	210 J	210 J	V
PR79-BR-004-P1-01	N	Nitrite (as N)	50.0	74.0	74.0 J	74.0 J	V
PR79-BR-004-P1-01	N	Sulfate	1000	8000	8000 J	8000	
PR79-GW-FD04-01	FD	Chloride	10000	46000	46000 J	46000	
PR79-GW-FD04-01	FD	Nitrate (as N)	50.0	230	230 J	230	
PR79-GW-FD04-01	FD	Nitrite (as N)	50.0	76.0	76.0 J	76.0	
PR79-GW-FD04-01	FD	Sulfate	1000	7900	7900 J	7900	

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-001-P1-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-BR-001-P1-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-BR-001-P2-01	N	Chloroform	0.100	0.400	0.400	0.400 J	V1
PR79-BR-001-P2-01	N	Trichloroethene (TCE)	0.100	2.10	2.10 J	2.10	
PR79-BR-001-P3-01	N	Chloroform	0.500	4.10	4.10 J	4.10 J	V1
PR79-BR-004-P1-01	N	Chloroform	0.100	0.220	0.220 J	0.220 J	V/D3/V1
PR79-GW-EB02-01	EB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-GW-EB02-01	EB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-GW-FD03-01	FD	Chloroform	0.100	0.290	0.290	0.290 J	V1
PR79-GW-FD04-01	FD	Chloroform	0.100	0.360	0.360 J	0.360 J	D3/V1
TB-GW-20201216-02-01	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S

Table of Results with Modified Qualifiers

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
TB-GW-20201216-02-01	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
D3	Field Duplicate RPD
H1	Test Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
S	Internal standard
TR	Trace Level Detect
V	Equipment Blank
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292296: Alkalinity 2.5 J mg/L. See outlier report. Result for alkalinity in EB was qualified (U) as nondetect.
Were target analytes in the field blank less than MDL?		•		Result in PR79-GW-EB02-01 was qualified as nondetect (U) due to method blank contamination; no quals for EB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-001-P1-01 / PR79-GW-FD03-01 criteria metPR79-BR-004-P1-01 / PR79-GW-FD04-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			PR79-GW-EB02-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			TN0323-1 criteria met
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-001-P1-01 / PR79-GW-FD03-01 criteria met PR79-BR-004-P1-01 / PR79-GW-FD04-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292139 TOC 0.13 J mg/L - see outlier report. Results <RL qualified as nondetect (U).
Were target analytes in the field blank less than MDL?		•		PR79-GW-EB02-01 result qualified (U) due to method blank contamination. See outlier report. No actions for EB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0323-2 within limits, MS only
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			TN0323-2 precision criteria met; one result <RL and one ND. No actions.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-001-P1-01/PR79-GW-FD03-01 PR79-BR-004-P1-01/PR79-GW-FD04-01
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			per WS15
Were surrogate recoveries within project acceptance limits?		•		2,4-dibromophenol surrogate 0%R and 2-Methylnaphthalene-D10 %R below criteria for FD sample PR79-GW-FD03-01. Assoc ND pentachlorophenol result was rejected (R) based on email with USACE chemist since parent sample PR79-BR-001-P1-01 surrogate %R was acceptable. Other B/N compounds qualified as estimated (J-/UJ). See outlier report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			PR79-GW-EB02-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-001-P1-01/PR79-GW-FD03-01 and PR79-BR-004-P1-01/PR79-GW-FD04-01. See outlier report: 14-dioxane outside criteria in FD03/BR-001-P1-01. Parent and FD only qualified.
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV U3141 high response for acenaphthene; assoc results in samples TN0323-1,2,3,4,5,8,9 qualified J+/UJ per DoD Mod1. Outlier and qualifications added manually per discussions with USACE project chemist.
Were DoD QSM corrective actions followed if deviations were noted?		•		CCV outside criteria; samples not reanalyzed
Were any data recommended for rejection (exclusion) in the data validation process?	•			ND result for pentachlorophenol in sample PR79 -GW-FD03-01 was rejected due to surrogate recovery.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292309-1 Methane 2.2 J ug/L - see outlier report for qualified results
Were target analytes in the field blank less than MDL?		•		PR79-GW-EB02-01 result for methane in EB was qualified as estimated (U) due to method blank contamination. No quals for EB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	NA for this method
Was the laboratory duplicate RPD within project acceptance limits?			•	NA for this method
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-001-P1-01/PR79-GW-FD03-01 PR79-BR-004-P1-01/PR79-GW-FD04-01
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL21ICW3: K 52 J ug/L, Na 28 J ug/L. Result for total and diss Na negated in EB. Method blank outliers added manually for dissolved metals results. See outlier report.
Were target analytes in the field blank less than MDL?		•		PR79-GW-EB02-01 - see outlier report. Several analytes detected in EB (total and diss) after method blank actions applied.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			MS/MSD not requested but analyzed on equipment blank PR79-GW-EB02-01.
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-GW-EB02-01
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-001-P1-01 / PR79-GW-FD03-01 criteria met for total and dissolved metals. PR79-BR-004-P1-01 / PR79-GW-FD04-01 criteria met for total and dissolved metals.
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			PBWNL21IMW3
Were target analytes in the method blank less than MDL?		•		PBWNL21IMW3: Sb, Be, Cd, Co, Pb, Tl detected. See outlier report. Outliers and qualifications manually entered for dissolved results.
Were target analytes in the field blank less than MDL?		•		PR79-GW-EB02-01: Ni (Diss) after method blank actions applied. See outlier report.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			MS not requested but analyzed on equipment blank, PR79-GW-EB02-01.
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-GW-EB02-01
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed, see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-004-P1-01 / PR79-GW-FD04-01 criteria met. PR79-BR-001-P1-01 / PR79-GW-FD03-01 criteria met.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9C, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL29HGW1 Hg 0.026 J ug/L see outlier report
Were target analytes in the field blank less than MDL?	•			PR79-GW-EB02-01 total and diss Hg ND after method blank actions
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-GW-FD03-01
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed; see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-004-P1-01 / PR79-GW-FD04-01 criteria met. PR79-BR-001-P1-01 / PR79-GW-FD03-01 criteria met.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report. DCA above criteria in two samples; positive results qualified (J+) as estimated.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292471-2: methylene chloride 2.0 J ug/L. See outlier report; assoc results ND, no actions required.
Were target analytes in the field blank less than MDL?		•		TB-GW-20201216-01-01 ND, PR79-GW-EB02-01: acetone, methylene chloride. See outlier report. Assoc results qualified U or J+ (reason code V).
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-001-P1-01/PR79-GW-FD03-01: precision criteria met. PR79-BR-004-P1-01/PR79-GW-FD04-01. See outlier report: acetone outside criteria; parent and FD only qualified.
Were QAPP specified laboratory PQLs achieved?	•			Lab LOQ for t-butyl alcohol does not match QAPP but meets PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV T9685 low response for bromomethane; results manually qualified as estimated (J-/UJ) per discussion with Corps. See outlier report.
Were DoD QSM corrective actions followed if deviations were noted?		•		CCV outside criteria; samples not reanalyzed
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C
Were holding times met?	•			Note results for anions in samples PR79-BR-004 -P1-01 (TN0323-8) and PR79-GW-FD04-01 (TN0323-9) were qualified by ADR due to HT exceedance based on chloride analysis date. HT criteria were met for nitrate/nitrite (48h) and chloride/sulfate (28d). Qualifications were manually removed.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292517 Nitrate 0.030 J mg/L, Sulfate 0.094 J mg/L. Results <RL were qualified as nondetect (U) at RL.
Were target analytes in the field blank less than MDL?		•		PR79-GW-EB02-01: after applying method blank qualifications, Cl 0.11 J mg/L, Nitrite 0.015 J mg/L in EB. See outlier report.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-001-P1-01/PR79-GW-FD03-01 and PR79-BR-004-P1-01/PR79-GW-FD04-01
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.9, 3.4C, pH<2
Were holding times met?	•			Dilution analyses of samples TN0323-2 and TN0323-3 were analyzed on the 14th day from collection but were qualified by ADR since they were >14 days by <1 hour. Based on professional judgment, qualification was manually removed by validator.
Were all requested target analytes reported?	•			per WS15
Were surrogate recoveries within project acceptance limits?		•		Surr BFB below criteria in 3 samples; see outlier report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		PR79-GW-EB02-01: chloroform 0.049 J ug/L. One result qualified J+ since it's >LOQ but <5X blank. See outlier report.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-004-P1-01 / PR79-GW-FD04-01 chloroform RL criteria not met; see outlier report. PR79-BR-001-P1-01 / PR79-GW-FD03-01 criteria met.
Were QAPP specified laboratory PQLs achieved?	•			PQLs met per WS15 for ND results. RL for chloroform in sample TN0323-3DL above PQL due to sample dilution for high chloroform result.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		ICV D2262A above criteria for chloroform, assoc results manually qualified (J+/UJ). CCV S8656 low for surr p-bromoofluorobenzene; no actions for surr. Int Std 14-difluorobenzene below criteria in samples PR79-BR-001-P1-01, PR79-GW-EB02-01, TB-GW-20201216-02-01; assoc results for 123TCBz, 124TCBz qualified (J+/UJ).
Were DoD QSM corrective actions followed if deviations were noted?		•		Where the ICV did not meet criteria, the initial calibrations were not re-performed. Internal Std outside criteria, samples not reanalyzed.
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SN9569
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-GW-FD01-01	SN9569-10	Water	Field Duplicate/FD							X		X		X		
PR79-GW-FD01-01	SN9569-4	Water	Field Duplicate/FD	X	X	X	X	X	X		X		X		X	X
PR79-MW-001-01	SN9569-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-MW-001-01	SN9569-7	Water	Field Sample/N							X		X		X		
PR79-MW-002-01	SN9569-2	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-MW-002-01	SN9569-8	Water	Field Sample/N							X		X		X		
PR79-MW-003-01	SN9569-3	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-MW-003-01	SN9569-9	Water	Field Sample/N							X		X		X		
TB-01-01	SN9569-5	Water	Trip Blank/TB												X	
TB-01-02	SN9569-6	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-GW-FD01-01	SN9569-10	Water	Field Duplicate/FD	
PR79-GW-FD01-01	SN9569-4	Water	Field Duplicate/FD	X
PR79-MW-001-01	SN9569-1	Water	Field Sample/N	X
PR79-MW-001-01	SN9569-7	Water	Field Sample/N	
PR79-MW-002-01	SN9569-2	Water	Field Sample/N	X
PR79-MW-002-01	SN9569-8	Water	Field Sample/N	
PR79-MW-003-01	SN9569-3	Water	Field Sample/N	X
PR79-MW-003-01	SN9569-9	Water	Field Sample/N	
TB-01-01	SN9569-5	Water	Trip Blank/TB	
TB-01-02	SN9569-6	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SN9569. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 62 results (12.16%) out of the 510 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	Due to laboratory error, the samples were extracted by method SW846 3510C instead of the requested method SW846 3520C. The client was contacted on 12/04/2020 regarding the deviation and the laboratory was advised to proceed with narration.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.

Kristin Rutherford

March 01, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 30, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290536-1 (LB)/ WG290536-1	Alkalinity, Total (as CaCO3)	1400	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A5310B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290494-1 (LB)/ WG290494-1	Total Organic Carbon	0.5000	< 0.1	< 1	mg/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A5310B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Total Organic Carbon	1.00	0.780 J	1.00 U		mg/l	L
PR79-MW-001-01	N	Total Organic Carbon	1.00	0.570 J	1.00 U		mg/l	L
PR79-MW-002-01	N	Total Organic Carbon	1.00	0.470 J	0.500 U		mg/l	L
PR79-MW-003-01	N	Total Organic Carbon	1.00	0.210 J	0.500 U		mg/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290794-8 (IV)	Acenaphthylene	75.56	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1
PR79-MW-001-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1
PR79-MW-002-01	N	Acenaphthylene	0.200	0.100 U	0.100 UJ		ug/l	V1
PR79-MW-003-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290601-1 (LB)/ WG290601-1	Methane	2.200	< 1.9	< 10	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Methane	10.0	5.60 J	10.0 U		ug/l	L
PR79-MW-001-01	N	Methane	10.0	5.60 J	10.0 U		ug/l	L
PR79-MW-002-01	N	Methane	10.0	4.90 J	5.00 U		ug/l	L
PR79-MW-003-01	N	Methane	10.0	2.00 J	5.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02ICW2 (LB)	Barium	0.2500	< 0.23	< 5	ug/l	None/None	L	
PBWNL02ICW2 (LB)	Sodium	32.00	< 24	< 1000	ug/l	None/None	L	
PBWNL02ICW2 (LB)	Magnesium	8.000	< 7.8	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Barium	5.00	4.05 J	5.00 U		ug/l	L
PR79-MW-001-01	N	Barium	5.00	3.31 J	5.00 U		ug/l	L
PR79-MW-003-01	N	Barium	5.00	3.20 J	5.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02ICW2 (LB)/ PBWNL02ICW2	Barium	0.2500	< 0.23	< 5	ug/l	U/None	L	
PBWNL02ICW2 (LB)/ PBWNL02ICW2	Sodium	32.00	< 24	< 1000	ug/l	U/None	L	
PBWNL02ICW2 (LB)/ PBWNL02ICW2	Magnesium	8.000	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-003-01	N	Barium	5.00	3.97 J	5.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02IMW2 (LB)	Cadmium	0.03200	< 0.029	< 0.2	ug/l	None/None	L	
PBWNL02IMW2 (LB)	Antimony	0.06700	< 0.055	< 0.5	ug/l	None/None	L	
PBWNL02IMW2 (LB)	Lead	0.1400	< 0.075	< 0.5	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Antimony	1.00	0.460 J	0.500 U		ug/l	L
PR79-GW-FD01-01	FD	Cadmium	1.00	0.0310 J	0.200 U		ug/l	L
PR79-GW-FD01-01	FD	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Antimony	1.00	0.400 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Antimony	1.00	0.0860 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-003-01	N	Antimony	1.00	0.0730 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02IMW2 (LB)/ PBWNL02IMW2	Cadmium	0.03200	< 0.03	< 1	ug/l	U/None	L	
PBWNL02IMW2 (LB)/ PBWNL02IMW2	Antimony	0.06700	< 0.054	< 1	ug/l	U/None	L	
PBWNL02IMW2 (LB)/ PBWNL02IMW2	Lead	0.1400	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Antimony	1.00	0.420 J	0.500 U		ug/l	L
PR79-GW-FD01-01	FD	Lead	1.00	0.250 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Antimony	1.00	0.410 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Cadmium	1.00	0.0300 J	0.200 U		ug/l	L
PR79-MW-001-01	N	Lead	1.00	0.290 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Antimony	1.00	0.140 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Cadmium	1.00	0.0300 J	0.200 U		ug/l	L
PR79-MW-002-01	N	Lead	1.00	0.200 J	0.500 U		ug/l	L
PR79-MW-003-01	N	Antimony	1.00	0.0910 J	0.500 U		ug/l	L
PR79-MW-003-01	N	Lead	1.00	0.0980 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290944-4 (CV)/ SN9569-2	Acetone	134.2	80 - 120	50 - 150	percent	J/UJ	V2	
WG290944-4 (CV)/ SN9569-2	tert-Butyl alcohol	65.41	80 - 120	50 - 150	percent	J/UJ	V2	
WG290944-4 (CV)/ SN9569-2	1,2,3-Trichlorobenzene	70.56	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	V1/V2
PR79-MW-002-01	N	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-MW-002-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290752-8 (IV)/ SN9569-2	tert-Butyl alcohol	70.02	80 - 120	50 - 150	percent	J/UJ	V1	
WG290752-8 (IV)/ SN9569-2	1,1-Dichloroethene	75.02	80 - 120	50 - 150	percent	J/UJ	V1	
WG290752-8 (IV)/ SN9569-2	1,2,3-Trichlorobenzene	75.62	80 - 120	50 - 150	percent	J/UJ	V1	
WG290752-8 (IV)/ SN9569-2	trans-1,2-Dichloroethene	77.51	80 - 120	50 - 150	percent	J/UJ	V1	
WG290752-8 (IV)/ SN9569-2	Methylene chloride	78.03	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-002-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	V1/V2
PR79-MW-002-01	N	Methylene chloride	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-MW-002-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V1/V2
PR79-MW-002-01	N	trans-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290944-2 (LB)/ WG290944-2	1,2,3-Trichlorobenzene	0.9600	< 0.27	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-FD01-01 (FD)/ SN9569-4	1,2-Dichloroethane-d4	121.0	81 - 118	10 - 118	percent	J/None	I	
PR79-MW-003-01 (N)/ SN9569-3	1,2-Dichloroethane-d4	120.0	81 - 118	10 - 118	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-003-01	N	Trichloroethene (TCE)	1.00	37.0	37.0 J	+	ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290423-1 (LB)/ WG290423-1	Sulfate	99.00	< 64	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-003-01 (MS)/ WG290423-7	Nitrite (as N)	114.0	90 - 110	30 - 110	percent	J/None	M	
PR79-MW-003-01 (MS)/ WG290423-7	Sulfate	80.00	90 - 110	30 - 110	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Exceeds LinearCalibration Range

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-003-01/ SN9569-3	Trichloroethene (TCE)	33.00			ug/l	J/None	R	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Exceeds LinearCalibration Range for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-003-01	N	Trichloroethene (TCE)	0.0500	33.0 E	33.0 J		ug/l	I/R

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290980-9 (IV)	Chloroform	127.4	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Chloroform	0.100	0.0660 J	0.0660 J	+	ug/l	TR/V1
PR79-MW-001-01	N	Chloroform	0.100	0.0650 J	0.0650 J	+	ug/l	TR/V1
PR79-MW-002-01	N	Chloroform	0.100	0.0300 J	0.0300 J	+	ug/l	I/TR/V1
PR79-MW-003-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	I/V1
TB-01-02	TB	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
1,4-DICHLOROBENZENE-D4/ SN9569-1	1,2,3-Trichlorobenzene	8563	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-1	1,2,4-Trichlorobenzene	8563	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-2	1,2,3-Trichlorobenzene	8477	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-2	1,2,4-Trichlorobenzene	8477	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-3	1,2,3-Trichlorobenzene	8802	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-3	1,2,4-Trichlorobenzene	8802	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-4	1,2,3-Trichlorobenzene	8080	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-4	1,2,4-Trichlorobenzene	8080	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-6	1,2,3-Trichlorobenzene	8524	8842 - 35370	3537 - 35370	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9569-6	1,2,4-Trichlorobenzene	8524	8842 - 35370	3537 - 35370	area	J/UJ	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-GW-FD01-01	FD	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-002-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-003-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-003-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
TB-01-02	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
TB-01-02	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-002-01 (N)/ SN9569-2	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	38.90	70 - 130	10 - 130	percent	J/UJ	I	
PR79-MW-003-01 (N)/ SN9569-3	Toluene-d8	61.10	70 - 130	10 - 130	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-002-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-002-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-MW-002-01	N	Chloroform	0.100	0.0300 J	0.0300 J	+	ug/l	I/TR/V1
PR79-MW-002-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-MW-002-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-MW-003-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-003-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-003-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-MW-003-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	I/V1
PR79-MW-003-01	N	Trichloroethene (TCE)	0.0500	33.0 E	33.0 J		ug/l	I/R
PR79-MW-003-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: A5310B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Total Organic Carbon	1.00	0.780 J	1.00 U		mg/l	L
PR79-MW-001-01	N	Total Organic Carbon	1.00	0.570 J	1.00 U		mg/l	L
PR79-MW-002-01	N	Total Organic Carbon	1.00	0.470 J	0.500 U		mg/l	L
PR79-MW-003-01	N	Total Organic Carbon	1.00	0.210 J	0.500 U		mg/l	L

Test Method: BNASIM Extraction Method: SW3510

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1
PR79-MW-001-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1
PR79-MW-002-01	N	Acenaphthylene	0.200	0.100 U	0.100 UJ		ug/l	V1
PR79-MW-003-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Methane	10.0	5.60 J	10.0 U		ug/l	L
PR79-MW-001-01	N	Methane	10.0	5.60 J	10.0 U		ug/l	L
PR79-MW-002-01	N	Methane	10.0	4.90 J	5.00 U		ug/l	L
PR79-MW-003-01	N	Methane	10.0	2.00 J	5.00 U		ug/l	L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Barium	5.00	4.05 J	5.00 U		ug/l	L
PR79-MW-001-01	N	Barium	5.00	3.31 J	5.00 U		ug/l	L
PR79-MW-003-01	N	Barium	5.00	3.20 J	5.00 U		ug/l	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-003-01	N	Barium	5.00	3.97 J	5.00 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Antimony	1.00	0.460 J	0.500 U		ug/l	L
PR79-GW-FD01-01	FD	Cadmium	1.00	0.0310 J	0.200 U		ug/l	L
PR79-GW-FD01-01	FD	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Antimony	1.00	0.400 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Antimony	1.00	0.0860 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-003-01	N	Antimony	1.00	0.0730 J	0.500 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Antimony	1.00	0.420 J	0.500 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Lead	1.00	0.250 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Antimony	1.00	0.410 J	0.500 U		ug/l	L
PR79-MW-001-01	N	Cadmium	1.00	0.0300 J	0.200 U		ug/l	L
PR79-MW-001-01	N	Lead	1.00	0.290 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Antimony	1.00	0.140 J	0.500 U		ug/l	L
PR79-MW-002-01	N	Cadmium	1.00	0.0300 J	0.200 U		ug/l	L
PR79-MW-002-01	N	Lead	1.00	0.200 J	0.500 U		ug/l	L
PR79-MW-003-01	N	Antimony	1.00	0.0910 J	0.500 U		ug/l	L
PR79-MW-003-01	N	Lead	1.00	0.0980 J	0.500 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-002-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	V1/V2
PR79-MW-002-01	N	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-MW-002-01	N	Methylene chloride	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-MW-002-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V1/V2
PR79-MW-002-01	N	trans-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1
PR79-MW-003-01	N	Trichloroethene (TCE)	1.00	37.0	37.0 J	+	ug/l	I

Test Method: VOCSIMC Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD01-01	FD	Chloroform	0.100	0.0660 J	0.0660 J	+	ug/l	TR/V1
PR79-GW-FD01-01	FD	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-GW-FD01-01	FD	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-001-01	N	Chloroform	0.100	0.0650 J	0.0650 J	+	ug/l	TR/V1
PR79-MW-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-002-01	N	Chloroform	0.100	0.0300 J	0.0300 J	+	ug/l	I/TR/V1
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-002-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-002-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-MW-002-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-MW-002-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-MW-003-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	I/V1
PR79-MW-003-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-003-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I/S
PR79-MW-003-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-MW-003-01	N	Trichloroethene (TCE)	0.0500	33.0 E	33.0 J		ug/l	I/R
PR79-MW-003-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
TB-01-02	TB	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	V1
TB-01-02	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Table of All Qualified Results

Test Method: VOCSIMC	**Extraction Method: SW5030**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
TB-01-02	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-GW-FD01-01	FD	Acenaphthylene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1
PR79-MW-001-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1
PR79-MW-002-01	N	Acenaphthylene	0.200	0.100 U	0.100 U	0.100 UJ	V1
PR79-MW-003-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-GW-FD01-01	FD	Barium	5.00	4.05 J	4.05 J	5.00 U	L
PR79-MW-001-01	N	Barium	5.00	3.31 J	3.31 J	5.00 U	L
PR79-MW-003-01	N	Barium	5.00	3.20 J	3.20 J	5.00 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-GW-FD01-01	FD	Antimony	1.00	0.460 J	0.460 J	0.500 U	L
PR79-GW-FD01-01	FD	Cadmium	1.00	0.0310 J	0.0310 J	0.200 U	L
PR79-GW-FD01-01	FD	Lead	1.00	0.110 J	0.110 J	0.500 U	L
PR79-MW-001-01	N	Antimony	1.00	0.400 J	0.400 J	0.500 U	L
PR79-MW-001-01	N	Lead	1.00	0.110 J	0.110 J	0.500 U	L
PR79-MW-002-01	N	Antimony	1.00	0.0860 J	0.0860 J	0.500 U	L
PR79-MW-002-01	N	Lead	1.00	0.110 J	0.110 J	0.500 U	L
PR79-MW-003-01	N	Antimony	1.00	0.0730 J	0.0730 J	0.500 U	L

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-002-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 U	0.500 UJ	V1
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 U	0.500 UJ	V1/V2
PR79-MW-002-01	N	Acetone	5.00	2.50 U	2.50 U	2.50 UJ	V2
PR79-MW-002-01	N	Methylene chloride	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-MW-002-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 U	5.00 UJ	V1/V2
PR79-MW-002-01	N	trans-1,2-Dichloroethene	1.00	0.500 U	0.500 U	0.500 UJ	V1

Modified Qualifiers for test method SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-003-01	N	Sulfate	1000	9000	9000 J	9000	

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-GW-FD01-01	FD	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-GW-FD01-01	FD	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-GW-FD01-01	FD	Chloroform	0.100	0.0660 J	0.0660 J	0.0660 J	TR/V1
PR79-MW-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-MW-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-MW-001-01	N	Chloroform	0.100	0.0650 J	0.0650 J	0.0650 J	TR/V1

Table of Results with Modified Qualifiers

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-002-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-MW-002-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-MW-002-01	N	Chloroform	0.100	0.0300 J	0.0300 J	0.0300 J	I/TR/V1
PR79-MW-003-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-MW-003-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-MW-003-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ	0.0250 UJ	I/V1
PR79-MW-003-01	N	Trichloroethene (TCE)	0.0500	33.0 E	33.0 J	33.0 J	I/R
TB-01-02	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
TB-01-02	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
TB-01-02	TB	Chloroform	0.100	0.0250 U	0.0250 U	0.0250 UJ	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
R	Exceeds LinearCalibration Range
S	Internal standard
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Data Validation Report for SN9569

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1, 2.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG290536 Alkalinity (1.4 J mg/L); see outlier report
Were target analytes in the field blank less than MDL?			•	no field blank submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS analyzed
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01: criteria met
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1, 2.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no field blank submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD analyzed
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01 both ND
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1,2.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG290494 MD (0.50 J mg/L); see outlier report
Were target analytes in the field blank less than MDL?			•	no field blank submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	no MS/MSD analyzed
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1, 2.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			per QAPP Wksht #15
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	No field blanks submitted with the samples in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not requested in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01: both samples ND
Were QAPP specified laboratory PQLs achieved?	•			no anomalies reported
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of a 2A validation: ICV low for acenaphthylene; assoc results qualified (J/UJ) as estimated based on discussion with Corps.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV exceedances were noted in the case narrative and the samples and calibration were not re-analyzed. Data qualification exceeds the scope of a QC Level 2A validation.
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1,2.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG290601-1 methane (2.2 J ug/L); see outlier report. Some results negated.
Were target analytes in the field blank less than MDL?			•	field blanks not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not analyzed
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	NA for this analysis
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dups not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1, 2.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			per QAPP WS#15
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL02ICW2 (Ba, Mg, Na); see outlier report. Note that blank qualifications were only applied to TOTAL metals results; quals were added manually for filtered results. Some results negated.
Were target analytes in the field blank less than MDL?			•	no field blanks submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		PR79-MW-001-01 for Hg only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-MW-001-01 Hg only
Was the laboratory duplicate RPD within project acceptance limits?			•	No lab dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01: criteria met for total and dissolved
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1, 2.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL02IMW2 (Sb, Cd, Pb); see outlier report. Note that blank qualifications were only applied to TOTAL metals results; quals were added manually for filtered results. Some results negated.
Were target analytes in the field blank less than MDL?			•	no field blank submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LSC only
Was a MS/MSD pair prepared with each batch?		•		MS/MSD for Hg only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	Serial dilution for Hg only
Was the laboratory duplicate RPD within project acceptance limits?			•	No lab dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01: criteria met for total and dissolved
Were QAPP specified laboratory PQLs achieved?	•			no anomalies reported
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1,2.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no field blank submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-MW-001-01 Hg only
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-MW-001-01 Hg only, both ND
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01: criteria met for total and dissolved
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1, 2.5C, sample preservation (HCl) noted on COC but pH not noted on run log for all samples. No issues were noted in case narrative or sample receipt. Based on prof judgment, no qualifications were made.
Were holding times met?	•			
Were all requested target analytes reported?	•			per QAPP WS#15. Note result for TCE was over calibration range in VOCSIM analysis of sample PR79-MW-003-01 (SN9569-3). Result was qualified (J, reason code R). TCE was also reported by 8260 within calibration range.
Were surrogate recoveries within project acceptance limits?		•		DCA above criteria in two 8260 samples; see outlier report. BFB below criteria in one VOCSIM sample and TOL-d8 below criteria in one sample and its re-analysis; see outlier report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		1,2,3-Trichlorobenzene detected in MB WG290944-2 (8260);see outlier report. No qualifications required, assoc results ND.
Were target analytes in the field blank less than MDL?	•			TB-01-01 ND (8260), TB-01-02 ND (VOCSIM)
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD requested in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01: both samples ND
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of a 2A validation: ICV (VOC SIM) above criteria for chloroform, assoc results may be biased high and were qualified (J +/UJ). VOCSIM Int Std 1,4-DICHLOROBENZENE-D4 response below criteria in samples PR79-MW-001-01, PR79-MW-002-01, PR79-MW-003-01, PR79-GW-FD01-01, TB-01-02. Assoc results 123TCBz and 124TCBz qualified (J+/UJ) as estimated based on discussion with the Corps. ICV (8260VOC) below criteria for t-butyl alcohol, 11DCE, methylene chloride, 123TCBz, t-12DCE; results in assoc sample SN9569-2 were qualified (J-/UJ) as estimated. CCV above criteria for acetone, below criteria for t-butyl-alcohol, 123TCBz; results in assoc sample PR79-MW-002-01 qualified as estimated.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV exceedances were noted and calibration and samples were not re-analyzed. Data qualification exceeds the scope of a QC Level 2A validation
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9569

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.1,2.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Sulfate (0.099 J mg/L) in MB WG290423; see outlier report. No quals.
Were target analytes in the field blank less than MDL?			•	no field blanks submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-MW-003-01 MS only
Were MS/MSD recoveries within project acceptance limits?		•		%Rs within criteria except Nitrite (high %R). See outlier report. No qual for nitrite since parent sample result ND and bias is high. Note outlier report has low %R for sulfate but MS %R within criteria in lab data (94% vs 90-110%R). Qualification to sample SN9569-3 was manually removed by validator.
Was the MS/MSD RPD within project acceptance limits?			•	MS only
Was the laboratory duplicate RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-MW-001-01 / PR79-GW-FD01-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9612

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SN9612
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	February 19, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-MW-006-01	SN9612-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-MW-006-01	SN9612-4	Water	Field Sample/N							X		X		X		
TB-01-03	SN9612-2	Water	Trip Blank/TB												X	
TB-01-04	SN9612-3	Water	Trip Blank/TB													

Data Validation Report for SN9612

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-MW-006-01	SN9612-1	Water	Field Sample/N	X
PR79-MW-006-01	SN9612-4	Water	Field Sample/N	
TB-01-03	SN9612-2	Water	Trip Blank/TB	
TB-01-04	SN9612-3	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN9612. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 18 results (11.32%) out of the 159 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Based on comments from the Corps, issues noted in the lab's case narrative that are not part of a Stage 2A validation were addressed in the review checklist and qualifiers were added.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.

Kristin Rutherford

February 19, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290536-1 (LB)/ WG290536-1	Alkalinity, Total (as CaCO3)	1400	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290794-8 (IV)/ SN9612-1	Acenaphthylene	75.56	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02ICW2 (LB)/ SN9612-4	Barium	0.2500	< 0.23	< 5	ug/l	None/None	L	
PBWNL02ICW2 (LB)/ SN9612-4	Sodium	32.00	< 24	< 1000	ug/l	None/None	L	
PBWNL02ICW2 (LB)/ SN9612-4	Magnesium	8.000	< 7.8	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02ICW2 (LB)/ PBWNL02ICW2	Barium	0.2500	< 0.23	< 5	ug/l	U/None	L	
PBWNL02ICW2 (LB)/ PBWNL02ICW2	Sodium	32.00	< 24	< 1000	ug/l	U/None	L	
PBWNL02ICW2 (LB)/ PBWNL02ICW2	Magnesium	8.000	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02IMW2 (LB)/ SN9612-4	Cadmium	0.03200	< 0.029	< 1	ug/l	None/None	L	
PBWNL02IMW2 (LB)/ SN9612-4	Antimony	0.06700	< 0.055	< 1	ug/l	None/None	L	
PBWNL02IMW2 (LB)/ SN9612-4	Lead	0.1400	< 0.075	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Antimony	1.00	0.100 J	0.500 U		ug/l	L
PR79-MW-006-01	N	Cadmium	1.00	0.220 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL02IMW2 (LB)/ PBWNL02IMW2	Cadmium	0.03200	< 0.03	< 1	ug/l	U/None	L	
PBWNL02IMW2 (LB)/ PBWNL02IMW2	Antimony	0.06700	< 0.054	< 1	ug/l	U/None	L	
PBWNL02IMW2 (LB)/ PBWNL02IMW2	Lead	0.1400	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Antimony	1.00	0.0920 J	0.500 U		ug/l	L
PR79-MW-006-01	N	Cadmium	1.00	0.210 J	1.00 U		ug/l	L
PR79-MW-006-01	N	Lead	1.00	0.0870 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL01HGW2 (LB)/ SN9612-4	Mercury	0.02300	< 0.013	< 0.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW7470A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL01HGW2 (LB)/ PBWNL01HGW2	Mercury	0.02300	< 0.013	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Mercury	0.200	0.0160 J	0.100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291033-4 (CV)	Acetone	123.6	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V2
TB-01-03	TB	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-006-01 (N)/ SN9612-1		14.09	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
TB-01-03 (TB)/ SN9612-2		14.60	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-03 (TB)/ SN9612-2	Methylene chloride	1.200	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290542-1 (LB)/ WG290542-1	Sulfate	100.0	< 64	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-006-01 (MS)/ WG290542-4	Nitrite (as N)	139.5	90 - 110	30 - 110	percent	J/None	M	
PR79-MW-006-01 (MS)/ WG290542-4	Sulfate	88.00	90 - 110	30 - 110	percent	J/UJ	M	
PR79-MW-006-01 (MS)/ WG290580-4	Chloride	80.00	90 - 110	30 - 110	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Nitrite (as N)	50.0	210	210 J	+	ug/l	M
PR79-MW-006-01	N	Sulfate	1000	8700	8700 J	-	ug/l	M
PR79-MW-006-01	N	Chloride	20000	140000	140000 J	-	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290989-9 (IV)	Chloroform	130.6	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	V1
TB-01-04	TB	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
1,4-DICHLOROBENZENE-D4/ SN9612-1	1,2,3-Trichlorobenzene	4907	5362 - 21450	2145 - 21450	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9612-1	1,2,4-Trichlorobenzene	4907	5362 - 21450	2145 - 21450	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9612-3	1,2,3-Trichlorobenzene	5059	5362 - 21450	2145 - 21450	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9612-3	1,2,4-Trichlorobenzene	5059	5362 - 21450	2145 - 21450	area	J/UJ	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-006-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
TB-01-04	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
TB-01-04	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-04 (TB)/ SN9612-3	Benzene	0.01100	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3510

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Antimony	1.00	0.100 J	0.500 U		ug/l	L
PR79-MW-006-01	N	Cadmium	1.00	0.220 J	1.00 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Antimony	1.00	0.0920 J	0.500 U		ug/l	L
PR79-MW-006-01	N	Cadmium	1.00	0.210 J	1.00 U		ug/l	L
PR79-MW-006-01	N	Lead	1.00	0.0870 J	0.500 U		ug/l	L

Test Method: SW7470A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Mercury	0.200	0.0160 J	0.100 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V2
TB-01-03	TB	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V2

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Nitrite (as N)	50.0	210	210 J	+	ug/l	M
PR79-MW-006-01	N	Sulfate	1000	8700	8700 J	-	ug/l	M
PR79-MW-006-01	N	Chloride	20000	140000	140000 J	-	ug/l	M

Test Method: VOCSIMC Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-006-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	V1
PR79-MW-006-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-006-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
TB-01-04	TB	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	V1
TB-01-04	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
TB-01-04	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-006-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-006-01	N	Antimony	1.00	0.100 J	0.100 J	0.500 U	L
PR79-MW-006-01	N	Cadmium	1.00	0.220 J	0.220 J	1.00 U	L

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-006-01	N	Mercury	0.200	0.100 U	0.100 U	0.100	

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-006-01	N	1,1,1-Trichloroethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,1-Dichloroethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,2,4-Trichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,2,4-Trimethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,2-Dichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,3,5-Trimethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	2-Butanone (MEK)	5.00	2.50 U	2.50 UJ	2.50 U	
PR79-MW-006-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ	2.50 U	
PR79-MW-006-01	N	Acetone	5.00	2.50 U	2.50 UJ	2.50 UJ	V2
PR79-MW-006-01	N	Benzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Bromodichloromethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Bromomethane	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-MW-006-01	N	Carbon disulfide	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Chloroethane	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-MW-006-01	N	Chloroform	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Chloromethane	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-MW-006-01	N	cis-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Dibromochloromethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Ethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Isopropylbenzene (Cumene)	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	m,p-Xylene	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-MW-006-01	N	Methylene chloride	5.00	2.50 U	2.50 UJ	2.50 U	
PR79-MW-006-01	N	n-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	n-Propylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-006-01	N	p-Cymene (p-Isopropyltoluene)	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	sec-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ	5.00 U	
PR79-MW-006-01	N	tert-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Toluene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	trans-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Trichloroethene (TCE)	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-MW-006-01	N	Vinyl chloride	2.00	1.00 U	1.00 UJ	1.00 U	
TB-01-03	TB	1,1,1-Trichloroethane	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,1-Dichloroethane	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,2,4-Trichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,2,4-Trimethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,2-Dichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,3,5-Trimethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	2-Butanone (MEK)	5.00	2.50 U	2.50 UJ	2.50 U	
TB-01-03	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ	2.50 U	
TB-01-03	TB	Acetone	5.00	2.50 U	2.50 UJ	2.50 UJ	V2
TB-01-03	TB	Benzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Bromodichloromethane	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Bromomethane	2.00	1.00 U	1.00 UJ	1.00 U	
TB-01-03	TB	Carbon disulfide	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Chloroethane	2.00	1.00 U	1.00 UJ	1.00 U	
TB-01-03	TB	Chloroform	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Chloromethane	2.00	1.00 U	1.00 UJ	1.00 U	
TB-01-03	TB	cis-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Dibromochloromethane	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Ethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Isopropylbenzene (Cumene)	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	m,p-Xylene	2.00	1.00 U	1.00 UJ	1.00 U	
TB-01-03	TB	Methylene chloride	5.00	1.20 J	1.20 J	1.20 J	TR
TB-01-03	TB	n-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	n-Propylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	p-Cymene (p-Isopropyltoluene)	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	sec-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ	5.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
TB-01-03	TB	tert-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Toluene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	trans-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Trichloroethene (TCE)	1.00	0.500 U	0.500 UJ	0.500 U	
TB-01-03	TB	Vinyl chloride	2.00	1.00 U	1.00 UJ	1.00 U	

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-006-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-MW-006-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-MW-006-01	N	Chloroform	0.100	0.0250 U	0.0250 U	0.0250 UJ	V1
TB-01-04	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
TB-01-04	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
TB-01-04	TB	Chloroform	0.100	0.0250 U	0.0250 U	0.0250 UJ	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
H1	Test Hold Time
L	Lab Blank
M	MS Recovery
S	Internal standard
T	Trip Blank
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG290536 1.4 J mg/L. No quals required - sample >LOQ, >5X MB.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS for alkalinity
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no Lab Dup analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9612

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	No FB submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			SN9612-1, both ND
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9612

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			MB WG290705-1RA ND
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not reviewed as part of 2A validation: ICV below criteria for acenaphthylene; result in assoc sample PR79-MW-006-01 qualified based on discussion with Corps.
Were DoD QSM corrective actions followed if deviations were noted?		•		Calibration and samples should have been reanalyzed due to ICV nonconformace.
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			MB WG290962-1 ND
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	surrogates NA for MEE
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not performed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			Lab's sample login notes container received for Hardness but no container noted on COC or in lab Container Transfer History. Hardness is calculated from 6010 metals results - container information matches 6010 sample collection. No action except to note this discrepancy.
Were samples preserved properly and received in good condition?	•			0.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			PBWNL02ICW2
Were target analytes in the method blank less than MDL?		•		PBWNL02ICW2: Ba, Mg, Na detected <LOQ in MB. See outlier report. Note: qualifications were automatically applied to Total Metals samples. Qualifications were manually applied by validator for Dissolved Metals results.
Were target analytes in the field blank less than MDL?			•	FB not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	serial dilution not performed on site sample
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL02IMW2: Sb, Cd, Pb detected. See outlier report. MB actions were applied automatically to Total Metals results. Nonconformance was applied manually by validator to Dissolved Metals results.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	Serial dilution not performed on site sample
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not performed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL01HGW2 Hg detected. No quals, assoc result ND.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-MW-006-01
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-MW-006-01 criteria met for results >50X LOQ
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C, pH<2
Were holding times met?	•			Samples PR79-MW-006-01 and TB-01-03 were analyzed (8260) on the 14th day from collection. Qualifications were applied by ADR based on fractions of a day (14.09 and 14.60 d). Based on professional judgment, since samples were analyzed on day 14, qualifications were removed by the validator.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			8260 MB WG291033-2 ND VOCSIM MB WG290989-11, WG291035-2 ND
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		8260: TB-01-03 Methylene chloride (1.2 J ug/L). No quals assoc result ND. VOCSIM: TB-01-04 Benzene (0.011 J ug/L)> No quals since assoc result ND.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not reviewed as part of a 2A validation: VOCSIM Int Std 1,4-DICHLOROBENZENE-D4 below criteria in PR79-MW-006-01, TB-01-04. Assoc results 123TCBz and 124TCBz were qualified (J +/UJ). VOCSIM ICV above criteria for chloroform; results in PR79-MW-006-01, TB-01-04 qualified (J+/UJ). VOC8260 CCV high for acetone; results in PR79-MW-006-01, TB-01-04 qualified (J+/UJ)
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformances were noted in the case narrative for VOCSIM. Calibration and samples should have been re-analyzed with acceptable calibration.
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG290542 Sulfate (0.10 J mg/L). No quals required since asso sample results >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			SN9612-1 MS only
Were MS/MSD recoveries within project acceptance limits?		•		SN9612-1 Chloride, Sulfate %R below criteria; Nitrite %R above criteria. See outlier report. MS only.
Was the MS/MSD RPD within project acceptance limits?			•	MS only
Was the laboratory duplicate RPD within project acceptance limits?	•			SN9612-1 criteria met
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?		•		Chloride PQL above action limit due to dilution. No ND results.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9745

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SN9745
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 09, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
GW-EB-01	SN9745-2	Water	Equipment Blank/EB	X	X	X	X	X	X		X		X		X	X
GW-EB-01	SN9745-6	Water	Equipment Blank/EB							X		X		X		
PR79-MW-005-01	SN9745-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-MW-005-01	SN9745-5	Water	Field Sample/N							X		X		X		
TB-112320-01	SN9745-3	Water	Trip Blank/TB												X	
TB-112320-02	SN9745-4	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
GW-EB-01	SN9745-2	Water	Equipment Blank/EB	X
GW-EB-01	SN9745-6	Water	Equipment Blank/EB	
PR79-MW-005-01	SN9745-1	Water	Field Sample/N	X
PR79-MW-005-01	SN9745-5	Water	Field Sample/N	
TB-112320-01	SN9745-3	Water	Trip Blank/TB	
TB-112320-02	SN9745-4	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SN9745. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Equipment Blank
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 30 results (10.87%) out of the 276 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Based on comments from the Corps, issues noted in the lab's case narrative that are not part of a Stage 2A validation were addressed in the review checklist and qualifiers were added.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
VOCSIMC	No additional comments; see Checklist for detail.

Kristin Rutherford

March 01, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Alkalinity, Total (as CaCO3)	1200	< 230	< 5000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290876-1 (LB)/ WG290876-1	Alkalinity, Total (as CaCO3)	1500	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Alkalinity, Total (as CaCO3)	5000	1200 J	4000 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A5310B, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Total Organic Carbon	0.9100	< 0.1	< 1	mg/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for A5310B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Total Organic Carbon	1.00	1.90	1.90 J	+	mg/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291001-2 (BS)/ WG291001-2	Benzo(a)pyrene	52.50	53 - 120	10 - 120	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Benzo(a)pyrene	0.190	0.0940 UL	0.0940 UJ		ug/l	C
PR79-MW-005-01	N	Benzo(a)pyrene	0.190	0.0950 UL	0.0950 UJ		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Methane	3.100	< 1.9	< 10	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Methane	10.0	3.20 J	5.00 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-6	Zinc	1.200	< 0.72	< 20	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-6	Magnesium	12.00	< 7.8	< 100	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-6	Calcium	20.00	< 11	< 100	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-6	Manganese	35.20	< 1.1	< 5	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-6	Sodium	81.00	< 24	< 1000	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-6	Potassium	88.00	< 41	< 1000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Manganese	5.00	156	156 J	+	ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL04ICW2 (LB)	Zinc	1.400	< 0.72	< 20	ug/l	None/None	L	
PBWNL04ICW2 (LB)	Sodium	27.00	< 24	< 1000	ug/l	None/None	L	
PBWNL04ICW2 (LB)	Potassium	52.00	< 41	< 1000	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Potassium	1000	88.0 J	500 U		ug/l	L
GW-EB-01	EB	Sodium	1000	81.0 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Zinc	1.100	< 0.72	< 20	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Sodium	34.00	< 24	< 1000	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Potassium	47.00	< 41	< 1000	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Iron	7.800	< 5.4	< 100	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Manganese	9.000	< 1.1	< 5	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Magnesium	9.000	< 7.8	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Manganese	5.00	156	156 J	+	ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL04ICW2 (LB)/ PBWNL04ICW2	Zinc	1.400	< 0.72	< 20	ug/l	U/None	L	
PBWNL04ICW2 (LB)/ PBWNL04ICW2	Sodium	27.00	< 24	< 1000	ug/l	U/None	L	
PBWNL04ICW2 (LB)/ PBWNL04ICW2	Potassium	52.00	< 41	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Potassium	1000	47.0 J	500 U		ug/l	L
GW-EB-01	EB	Sodium	1000	34.0 J	500 U		ug/l	L
GW-EB-01	EB	Zinc	20.0	1.10 J	10.0 U		ug/l	L
PR79-MW-005-01	N	Zinc	20.0	6.60 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-6	Nickel	0.1700	< 0.15	< 2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Nickel	2.00	0.880 J	1.20 U		ug/l	L/V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL04IMW1 (LB)	Cadmium	0.04200	< 0.029	< 1	ug/l	None/None	L	
PBWNL04IMW1 (LB)	Antimony	0.06600	< 0.055	< 1	ug/l	None/None	L	
PBWNL04IMW1 (LB)	Lead	0.08400	< 0.075	< 1	ug/l	None/None	L	
PBWNL04IMW1 (LB)	Nickel	0.1700	< 0.15	< 2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Nickel	2.00	0.170 J	1.20 U		ug/l	L
PR79-MW-005-01	N	Antimony	1.00	0.0820 J	0.500		ug/l	L
PR79-MW-005-01	N	Cadmium	1.00	0.0310 J	0.200 U		ug/l	L
PR79-MW-005-01	N	Lead	1.00	0.270 J	0.500 U		ug/l	L/V
PR79-MW-005-01	N	Nickel	2.00	0.880 J	1.20 U		ug/l	L/V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Antimony	0.08700	< 0.055	< 1	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Lead	0.1100	< 0.075	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Antimony	1.00	0.240 J	0.500 U		ug/l	V/L
PR79-MW-005-01	N	Lead	1.00	0.270 J	0.500 U		ug/l	L/V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL04IMW1 (LB)/ PBWNL04IMW1	Cadmium	0.04200	< 0.03	< 1	ug/l	U/None	L	
PBWNL04IMW1 (LB)/ PBWNL04IMW1	Antimony	0.06600	< 0.054	< 1	ug/l	U/None	L	
PBWNL04IMW1 (LB)/ PBWNL04IMW1	Lead	0.08400	< 0.074	< 1	ug/l	U/None	L	
PBWNL04IMW1 (LB)/ PBWNL04IMW1	Nickel	0.1700	< 0.15	< 2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Antimony	1.00	0.0870 J	0.500 U		ug/l	L
GW-EB-01	EB	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-005-01	N	Antimony	1.00	0.240 J	0.500 U		ug/l	V/L
PR79-MW-005-01	N	Cadmium	1.00	0.0710 J	0.200 U		ug/l	L
PR79-MW-005-01	N	Nickel	2.00	1.86 J	2.00 U		ug/l	V/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-6	Mercury	0.02100	< 0.013	< 0.2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW7470A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL01HGW2 (LB)	Mercury	0.02300	< 0.013	< 0.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Mercury	0.200	0.0210 J	0.100 U		ug/l	L
PR79-MW-005-01	N	Mercury	0.200	0.0310 J	0.100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Mercury	0.01300	< 0.013	< 0.2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW7470A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL01HGW2 (LB)/ PBWNL01HGW2	Mercury	0.02300	< 0.013	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Mercury	0.200	0.0130 J	0.100 U		ug/l	L
PR79-MW-005-01	N	Mercury	0.200	0.0140 J	0.100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Acetone	11.00	< 2.2	< 5	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Sulfate	310.0	< 64	< 1000	ug/l	U/None	V	
GW-EB-01 (EB)/ SN9745-2	Nitrate (as N)	32.00	< 17.4	< 50	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG290853-1 (LB)/ WG290853-1	Nitrate (as N)	39.00	< 17.4	< 50	ug/l	U/None	L	
WG290853-1 (LB)/ WG290853-1	Sulfate	97.00	< 64	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Nitrate (as N)	50.0	32.0 J	50.0 U		ug/l	L
GW-EB-01	EB	Sulfate	1000	310 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GW-EB-01 (EB)/ SN9745-2	Benzene	0.06000	< 0.009	< 0.05	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
1,4-DICHLOROBENZENE-D4/ SN9745-1	1,2,3-Trichlorobenzene	24750	25086 - 100344	10034 - 100344	area	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SN9745-1	1,2,4-Trichlorobenzene	24750	25086 - 100344	10034 - 100344	area	J/UJ	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-005-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: A2320B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Alkalinity, Total (as CaCO3)	5000	1200 J	4000 U		ug/l	L

Test Method: A5310B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Total Organic Carbon	1.00	1.90	1.90 J	+	mg/l	V

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Benzo(a)pyrene	0.190	0.0940 UL	0.0940 UJ		ug/l	C
PR79-MW-005-01	N	Benzo(a)pyrene	0.190	0.0950 UL	0.0950 UJ		ug/l	C

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	Methane	10.0	3.20 J	5.00 U		ug/l	V

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Potassium	1000	88.0 J	500 U		ug/l	L
GW-EB-01	EB	Sodium	1000	81.0 J	500 U		ug/l	L
PR79-MW-005-01	N	Manganese	5.00	156	156 J	+	ug/l	V

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Potassium	1000	47.0 J	500 U		ug/l	L
GW-EB-01	EB	Sodium	1000	34.0 J	500 U		ug/l	L
GW-EB-01	EB	Zinc	20.0	1.10 J	10.0 U		ug/l	L
PR79-MW-005-01	N	Zinc	20.0	6.60 J	10.0 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Nickel	2.00	0.170 J	1.20 U		ug/l	L
PR79-MW-005-01	N	Antimony	1.00	0.0820 J	0.500		ug/l	L
PR79-MW-005-01	N	Cadmium	1.00	0.0310 J	0.200 U		ug/l	L
PR79-MW-005-01	N	Lead	1.00	0.270 J	0.500 U		ug/l	L/V
PR79-MW-005-01	N	Nickel	2.00	0.880 J	1.20 U		ug/l	L/V

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Antimony	1.00	0.0870 J	0.500 U		ug/l	L
GW-EB-01	EB	Lead	1.00	0.110 J	0.500 U		ug/l	L
PR79-MW-005-01	N	Antimony	1.00	0.240 J	0.500 U		ug/l	V/L
PR79-MW-005-01	N	Cadmium	1.00	0.0710 J	0.200 U		ug/l	L
PR79-MW-005-01	N	Nickel	2.00	1.86 J	2.00 U		ug/l	V/L

Table of All Qualified Results

Test Method: SW7470A	Extraction Method: Dissolved							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Mercury	0.200	0.0210 J	0.100 U		ug/l	L
PR79-MW-005-01	N	Mercury	0.200	0.0310 J	0.100 U		ug/l	L

Test Method: SW7470A	Extraction Method: Total							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Mercury	0.200	0.0130 J	0.100 U		ug/l	L
PR79-MW-005-01	N	Mercury	0.200	0.0140 J	0.100 U		ug/l	L

Test Method: SW9056A	Extraction Method: METHOD							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
GW-EB-01	EB	Nitrate (as N)	50.0	32.0 J	50.0 U		ug/l	L
GW-EB-01	EB	Sulfate	1000	310 J	500 U		ug/l	L

Test Method: VOCSIMC	Extraction Method: SW5030							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-005-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-MW-005-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
GW-EB-01	EB	Barium	5.00	3.00 U	3.00 U	3.00	
GW-EB-01	EB	Iron	100	80.0 U	80.0 U	80.0	
GW-EB-01	EB	Magnesium	100	12.0 J	12.0 J	12.0	TR
GW-EB-01	EB	Potassium	1000	88.0 J	88.0 J	500 U	L
GW-EB-01	EB	Sodium	1000	81.0 J	81.0 J	500 U	L
GW-EB-01	EB	Zinc	20.0	1.20 J	1.20 J	10.0	
PR79-MW-005-01	N	Zinc	20.0	2.70 J	10.0 U	10.0	

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-005-01	N	Zinc	20.0	6.60 J	10.0 U	10.0 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
GW-EB-01	EB	Nickel	2.00	0.170 J	0.170 J	1.20 U	L
PR79-MW-005-01	N	Antimony	1.00	0.0820 J	0.500 U	0.500	L
PR79-MW-005-01	N	Cadmium	1.00	0.0310 J	0.0310 J	0.200 U	L
PR79-MW-005-01	N	Lead	1.00	0.270 J	0.500 U	0.500 U	L/V
PR79-MW-005-01	N	Nickel	2.00	0.880 J	1.20 U	1.20 U	L/V

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
GW-EB-01	EB	Mercury	0.200	0.0210 J	0.0210 J	0.100 U	L
PR79-MW-005-01	N	Mercury	0.200	0.0310 J	0.100 U	0.100 U	L

Modified Qualifiers for test method SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-005-01	N	Mercury	0.200	0.0140 J	0.100 U	0.100 U	L

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-005-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S
PR79-MW-005-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 U	0.0250 UJ	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
L	Lab Blank
S	Internal standard
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG290876 Alkalinity 1.5 J mg/L. See outlier report - result in GW-EB-01 negated (U) at LOD.
Were target analytes in the field blank less than MDL?	•			GW-EB-01 - result in EB negated due to MB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed on a sample in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed on a sample in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FDs submitted
Were QAPP specified laboratory PQLs achieved?	•			Lab LOQ meets PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for SN9745

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG290867 ND
Were target analytes in the field blank less than MDL?	•			GW-EB-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed on sample in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			Lab LOQ meets PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for SN9745

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG291050 ND
Were target analytes in the field blank less than MDL?		•		GW-EB-01 (0.910 J mg/L) see outlier report. Result in assoc sample qualified (J+) since >LOQ but <5X EB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCs only
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed on sample in this set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG291001-1 ND
Were target analytes in the field blank less than MDL?	•			GW-EB-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report - Benzo(a)pyrene %R below criteria. Assoc results qualified (UJ).
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed on sample in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			no issues
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for SN9745

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG291072-1 ND
Were target analytes in the field blank less than MDL?		•		GW-EB-01 Methane 3.1 J ug/L; see outlier report - assoc result negated (U) at LOD
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed on sample in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	NA for this analysis
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			lab LOQ meets PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for SN9745

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			PBWNL04ICW2
Were target analytes in the method blank less than MDL?		•		PBWNL04ICW2: K, Na, Zn contamination <LOQ. See outlier report. Outliers and qualifications applied manually for dissolved results.
Were target analytes in the field blank less than MDL?		•		GW-EB-01 total (SN9745-2): Fe, Mg, Mn contamination after method blank quals (others negated due to MB). No quals for Total EB (note Mn is on outlier report under Total EB, but quals only apply to Diss Mn). GW-EB-01 dissolved (SN9745-6): Ca, Mn, Mg contamination after method blank quals. Result for Mn in assoc sample qualified (J+) since <5X EB. See outlier report.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not performed on sample in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	Serial dilution not performed on sample in this data set
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for SN9745

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL04IMW1 Sb, Cd, Pb, Ni contamination. See outlier report. Outliers and qualifications were manually applied by validator for dissolved results. Note reason code for negated Sb result in sample SN9745-005 was manually changed to L (for method blank) instead of V for EB since Sb was ND in EB.
Were target analytes in the field blank less than MDL?		•		Positive results in EB were negated (total and diss) based on MB contamination. No quals based on EB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	no serial dilution in this set
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL01HGW2 0.023 J ug/L -see outlier report. Results negated at LOD on total and dissolved sample and EB. Outlier and qualifications added manually for dissolved results.
Were target analytes in the field blank less than MDL?		•		Result in EB (total and diss) negated due to MB. No quals based on EB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		Trip blank ID does not match COC. TB-01-01 on COC; identified as TB-112320-01 in data package. No actions except to note this discrepancy.
Were samples preserved properly and received in good condition?	•			0.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		GW-EB-01 Acetone >LOQ (11 ug/L). Assoc sample results ND; no quals
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?		•		Tertiary-butyl Alcohol lab LOQ (10ug/L) does not match WS#15 but meets PQL.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			no issues
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report: Nitrate and Sulfate in MB WG290853. Results in EB were negated; no quals for sample SN9745-1.
Were target analytes in the field blank less than MDL?		•		GW-EB-01 results for Nitrate and Sulfate were negated (U) due to MB contamination. No quals based on EB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		Trip blank ID does not match COC. TB-01-02 on COC; identified as TB-112320-02 in data package. No actions except to note this discrepancy.
Were samples preserved properly and received in good condition?	•			0.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG291180-11, WG291270-2 ND
Were target analytes in the field blank less than MDL?		•		GW-EB-01 Benzene (0.06 J ug/L). Assoc results ND, no quals.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not analyzed in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: Internal std 1,4-DICHLOROBENZENE-D4 below criteria in sample PR79-MW-005-01; assoc results for 123TCBZ, 124TCBz manually qualified (J+/UJ) as estimated based on discussions with Corps.
Were DoD QSM corrective actions followed if deviations were noted?	•			Sample reanalyzed for IS nonconformance
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for SN9913

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SN9913
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 04, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-MW-004-01	SN9913-6	Water	Field Sample/N												X	
PR79-MW-007-01	SN9913-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-MW-007-01	SN9913-8	Water	Field Sample/N							X		X		X		
PZ-005-01	SN9913-5	Water	Field Sample/N												X	
PZ-010-01	SN9913-7	Water	Field Sample/N												X	
PZ-014-01	SN9913-4	Water	Field Sample/N												X	
TB-GW-20201201-01	SN9913-2	Water	Trip Blank/TB												X	
TB-GW-20201201-02	SN9913-3	Water	Trip Blank/TB													

Data Validation Report for SN9913

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-MW-004-01	SN9913-6	Water	Field Sample/N	
PR79-MW-007-01	SN9913-1	Water	Field Sample/N	X
PR79-MW-007-01	SN9913-8	Water	Field Sample/N	
PZ-005-01	SN9913-5	Water	Field Sample/N	
PZ-010-01	SN9913-7	Water	Field Sample/N	
PZ-014-01	SN9913-4	Water	Field Sample/N	
TB-GW-20201201-01	SN9913-2	Water	Trip Blank/TB	
TB-GW-20201201-02	SN9913-3	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SN9913. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 12 results (3.96%) out of the 303 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Based on comments from the Corps, issues noted in the lab's case narrative that are not part of a Stage 2A validation were addressed in the review checklist and qualifiers were added.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.

Kristin Rutherford

February 10, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291296-1 (LB)/ WG291296-1	Alkalinity, Total (as CaCO3)	1400	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291957-8 (IV)/ SN9913-1	2-Methylnaphthalene	123.7	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	2-Methylnaphthalene	0.190	0.0940 U	0.0940 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291404-1 (LB)/ WG291404-1	Pyrene	0.08300	< 0.059	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-007-01 (N)/ SN9913-1	2,4-Dibromophenol	3.530	10 - 130	10 - 130	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291401-1 (LB)/ WG291401-1	Methane	2.200	< 1.9	< 10	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Methane	10.0	3.00 J	5.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL08ICW2 (LB)/ SN9913-8	Vanadium	0.3000	< 0.23	< 10	ug/l	None/None	L	
PBWNL08ICW2 (LB)/ SN9913-8	Copper	1.200	< 0.63	< 25	ug/l	None/None	L	
PBWNL08ICW2 (LB)/ SN9913-8	Potassium	120.0	< 41	< 1000	ug/l	None/None	L	
PBWNL08ICW2 (LB)/ SN9913-8	Iron	16.00	< 5.4	< 100	ug/l	None/None	L	
PBWNL08ICW2 (LB)/ SN9913-8	Aluminum	21.00	< 15	< 300	ug/l	None/None	L	
PBWNL08ICW2 (LB)/ SN9913-8	Sodium	45.00	< 24	< 1000	ug/l	None/None	L	
PBWNL08ICW2 (LB)/ SN9913-8	Magnesium	9.100	< 7.8	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Aluminum	300	42.0 J	100 U		ug/l	L
PR79-MW-007-01	N	Copper	25.0	4.30 J	10.0 U		ug/l	L
PR79-MW-007-01	N	Iron	100	9.60 J	80.0 U		ug/l	L
PR79-MW-007-01	N	Vanadium	10.0	0.280 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Vanadium	0.3000	< 0.23	< 10	ug/l	U/None	L	
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Copper	1.200	< 0.63	< 25	ug/l	U/None	L	
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Potassium	120.0	< 41	< 1000	ug/l	U/None	L	
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Iron	16.00	< 5.4	< 100	ug/l	U/None	L	
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Aluminum	21.00	< 15	< 300	ug/l	U/None	L	
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Sodium	45.00	< 24	< 1000	ug/l	U/None	L	
PBWNL08ICW2 (LB)/ PBWNL08ICW2	Magnesium	9.100	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Aluminum	300	50.0 J	100 U		ug/l	L
PR79-MW-007-01	N	Copper	25.0	2.00 J	10.0 U		ug/l	L
PR79-MW-007-01	N	Iron	100	11.0 J	80.0 U		ug/l	L
PR79-MW-007-01	N	Vanadium	10.0	0.490 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291425-1 (LB)/ WG291425-1	Nitrate (as N)	31.00	< 17.4	< 50	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Nitrate (as N)	50.0	73.0	73.0 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-MW-007-01 (N)/ SN9913-1		14.10	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
TB-GW-20201201-02 (TB)/ SN9913-3		14.64	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-GW-20201201-02 (TB)/ SN9913-3	Chloroform	0.03700	< 0.0061	< 0.1	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	2-Methylnaphthalene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-MW-007-01	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Methane	10.0	3.00 J	5.00 U		ug/l	L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Aluminum	300	42.0 J	100 U		ug/l	L
PR79-MW-007-01	N	Copper	25.0	4.30 J	10.0 U		ug/l	L
PR79-MW-007-01	N	Iron	100	9.60 J	80.0 U		ug/l	L
PR79-MW-007-01	N	Vanadium	10.0	0.280 J	4.00 U		ug/l	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Aluminum	300	50.0 J	100 U		ug/l	L
PR79-MW-007-01	N	Copper	25.0	2.00 J	10.0 U		ug/l	L
PR79-MW-007-01	N	Iron	100	11.0 J	80.0 U		ug/l	L
PR79-MW-007-01	N	Vanadium	10.0	0.490 J	4.00 U		ug/l	L

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-MW-007-01	N	Nitrate (as N)	50.0	73.0	73.0 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-007-01	N	2-Methylnaphthalene	0.190	0.0940 U	0.0940 U	0.0940 UJ	V1
PR79-MW-007-01	N	Pentachlorophenol	0.940	0.470 U	0.470 X	0.470 UJ	I

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-007-01	N	Aluminum	300	42.0 J	42.0 J	100 U	L
PR79-MW-007-01	N	Copper	25.0	4.30 J	4.30 J	10.0 U	L
PR79-MW-007-01	N	Iron	100	9.60 J	9.60 J	80.0 U	L
PR79-MW-007-01	N	Vanadium	10.0	0.280 J	0.280 J	4.00 U	L

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-MW-007-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-MW-007-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-MW-007-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-MW-007-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ	0.0250 U	
PR79-MW-007-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-MW-007-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ	0.0500 U	
TB-GW-20201201-02	TB	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
TB-GW-20201201-02	TB	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
TB-GW-20201201-02	TB	Benzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
TB-GW-20201201-02	TB	Chloroform	0.100	0.0370 J	0.0370 J	0.0370 J	TR
TB-GW-20201201-02	TB	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
TB-GW-20201201-02	TB	Vinyl chloride	0.100	0.0500 U	0.0500 UJ	0.0500 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
H1	Test Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect
V1	ICV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG291296 alkalinity 1.4 J mg/L; see outlier report. No qualifications required since assoc sample >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies reported
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9913

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies reported
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9913

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C
Were holding times met?		•		The re-extraction of sample PR79-MW-007-01 was performed past 7d hold time (and >2X HT, grossly exceeding criteria) due to poor surr %R in initial analysis. Result was reported from the initial analysis and qualified as estimated due to surrogate %R; see outlier report.
Were all requested target analytes reported?	•			per QAPP WS#15
Were surrogate recoveries within project acceptance limits?		•		Surr DBP below criteria (<10%) in sample PR79-MW-007-01. Sample was re-extracted past 7d hold time (and >2X HT, grossly exceeding criteria) with acceptable surrogate %R. Based on prof judgment, ND result was reported from initial analysis and qualified as estimated (UJ) and not rejected since lower %R limit of surr DBP is 10%; see outlier report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. No quals since assoc sample result ND.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted with the data set
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of a 2A validation: ICV high for 2-methylnaphthalene; result in assoc sample PR79-MW-007-01 qualified based on discussions with Corps. ICV 12/31/20 Inst N not assoc with reported results, no quals. Ending CCVs analyzed past 12h tune; assoc results not reported from this run.
Were DoD QSM corrective actions followed if deviations were noted?		•		Calibration and samples not re-analyzed after ICV nonconformance.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Pentachlorophenol result in sample PR79-MW-007-01 was qualified as estimated due to low surrogate recovery. Re-extraction of this sample was performed outside of holding time but results were not reported.

Data Validation Report for SN9913

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG291401-1 Methane (2.2 J ug/L); see outlier report. Result in PR79-MW-007-01 negated.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	NA for MEE
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9913

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			Lab's sample login notes container received for Hardness but no container noted on COC or in lab Container Transfer History. Hardness is calculated from 6010 metals results - container information matches 6010 sample collection. No action except to note this discrepancy.
Were samples preserved properly and received in good condition?	•			3.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL08ICW2: Al, Cu, Fe, Mg, K, Na, V detected. See outlier report. MB is also assoc with dissolved results in sample PR79-MW-007-01 (SN9913-008). Qualifications applied manually by validator.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	Serial dilution analysis not reported for sample in this data set.
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not reported
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	serial dilution not reported for a sample in this data set
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not reported for a sample in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9913

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	not reported for a sample in this data set
Was the laboratory duplicate RPD within project acceptance limits?			•	not reported for a sample in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9913

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C, pH<2
Were holding times met?	•			Samples PR79-MW-007-01 and TB-GW-20201201-02 were qualified for VOCSIM analysis due to hold time since samples were analyzed >14 days (14.10, 14.64 days). Based on professional judgment, since samples were properly preserved and analyzed on the 14th day from collection, qualifications were manually removed by the validator.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB-GW-20201201-02: chloroform (0.037 J ug/L). No quals required since assoc results ND.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only for VOCSIM
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			no issues for VOCSIM or VOC 8260
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9913

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.3C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG291425 Nitrate (0.031 J mg/L): result in assoc sample PR79-MW-007-01 was qualified (J +) since result was >LOQ but <5X MB
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed on sample in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0801

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SO0801
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-PZ-001-01	SO0801-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-PZ-001-01	SO0801-2	Water	Field Sample/N							X		X		X		

Data Validation Report for SO0801

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-PZ-001-01	SO0801-1	Water	Field Sample/N	X
PR79-PZ-001-01	SO0801-2	Water	Field Sample/N	

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SO0801. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 13 results (11.11%) out of the 117 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Stage 2B validation performed for GCMS analyses; 2A for others.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
VOCSIMC	No additional comments; see Checklist for detail.

March 24, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG294845-1 (LB)/ WG294845-1	Alkalinity, Total (as CaCO3)	2600	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Alkalinity, Total (as CaCO3)	5000	10000	10000 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295176-10 (CV)/ SO0801-1	Dibenz (a,h)anthracene	121.0	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification RRF

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295176-10/ SO0801-1	Indeno(1,2,3-c,d)pyrene	0.3989			rf	J/UJ	V3	
WG295176-11/ SO0801-1	Indeno(1,2,3-c,d)pyrene	0.3885			rf	J/UJ	V3	
WG295176-9/ SO0801-1	Indeno(1,2,3-c,d)pyrene	0.4017			rf	J/UJ	V3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification RRF for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0530 J	0.0530 J		ug/l	TR/G2/G1/V1/ V3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration RRF

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
Inst N 02/24/21/ SO0801-1	Indeno(1,2,3-c,d)pyrene	0.3874			rf	J/UJ	G1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RRF for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0530 J	0.0530 J		ug/l	TR/G2/G1/V1/ V3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration RSD/r^2/r

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
Inst N 02/24/21/ SO0801-1	Indeno(1,2,3-c,d)pyrene	16.36	< 15	< 15	rsd	J/UJ	G2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RSD/r^2/r for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0530 J	0.0530 J		ug/l	TR/G2/G1/V1/ V3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295176-8 (IV)/ SO0801-1	Indeno(1,2,3-c,d)pyrene	79.31	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0530 J	0.0530 J		ug/l	TR/G2/G1/V1/ V3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB12ICW2 (LB)/ SO0801-2	Sodium	100.0	< 24	< 1000	ug/l	None/None	L	
PBWOB12ICW2 (LB)/ SO0801-2	Magnesium	15.00	< 7.8	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB12ICW2 (LB)/ PBWOB12ICW2	Sodium	100.0	< 24	< 1000	ug/l	U/None	L	
PBWOB12ICW2 (LB)/ PBWOB12ICW2	Magnesium	15.00	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB12IMW2 (LB)/ SO0801-2	Lead	0.08200	< 0.075	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Lead	1.00	0.240 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB12IMW2 (LB)/ PBWOB12IMW2	Lead	0.08200	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Lead	1.00	0.480 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295063-4 (CV)/ SO0801-1	tert-Butyl alcohol	72.80	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Initial Calibration RSD/r^2/r

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICAL 2/21/21 Inst W/ SO0801-1	tert-Butylbenzene	15.37	< 15		rsd	J/UJ	G2	
ICAL 2/21/21 Inst W/ SO0801-1	o-Xylene	15.38	< 15		rsd	J/UJ	G2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RSD/r^2/r for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	o-Xylene	1.00	0.500 U	0.500 UJ		ug/l	G2
PR79-PZ-001-01	N	tert-Butylbenzene	1.00	0.500 U	0.500 UJ		ug/l	G2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-PZ-001-01 (N)/ SO0801-1	1,2-Dichloroethane-d4	126.0	81 - 118	10 - 118	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295097-1 (LB)/ WG295097-1	Sulfate	230.0	< 64	< 1000	ug/l	U/None	L	
WG295097-1 (LB)/ WG295097-1	Nitrate (as N)	44.00	< 17	< 50	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Nitrate (as N)	50.0	48.0 J	50.0 UJ		ug/l	L/H1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-PZ-001-01 (MS)/ WG295097-5	Nitrite (as N)	110.1	90 - 110	30 - 110	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-PZ-001-01 (N)/ SO0801-1		144.7	< 48	< 96	hours	J/X	H1	Test Exceeds UCL
PR79-PZ-001-01 (N)/ WG295097-4		144.7	< 48	< 96	hours	J/X	H1	Test Exceeds UCL
PR79-PZ-001-01 (N)/ WG295097-5		144.7	< 48	< 96	hours	J/X	H1	Test Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Test Hold Time for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Nitrate (as N)	50.0	48.0 J	50.0 UJ		ug/l	L/H1
PR79-PZ-001-01	N	Nitrite (as N)	50.0	45.0 J	45.0 J		ug/l	H1/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295162-4 (CV)/ SO0801-1	Chloroform	65.94	80 - 120	50 - 150	%d	J/UJ	V2	
WG295162-5 (CV)/ SO0801-1	Chloroform	230.0	80 - 120	50 - 150	%d	J/UJ	V2	
WG295162-7 (CV)/ SO0801-1	Chloroform	256.0	80 - 120	50 - 150	%d	J/UJ	V2	
WG295162-8 (CV)/ SO0801-1	Chloroform	228.0	80 - 120	50 - 150	%d	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	G2/V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Initial Calibration RSD/r^2/r

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
Inst C 02/23/21/ SO0801-1	Chloroform	0.9855			r	J/UJ	G2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RSD/r^2/r for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	G2/V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295162-9 (IV)/ SO0801-1	Chloroform	74.99	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	G2/V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
1,4-DICHLOROBENZENE-D4/ SO0801-1	1,2,4-Trichlorobenzene	35.45	50 - 200	20 - 200	percent	J/UJ	S	
1,4-DICHLOROBENZENE-D4/ SO0801-1	1,2,3-Trichlorobenzene	35.50	50 - 200	20 - 200	percent	J/UJ	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-PZ-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-PZ-001-01 (N)/ SO0801-1		14.16	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: A2320B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Alkalinity, Total (as CaCO3)	5000	10000	10000 J	+	ug/l	L

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	V2
PR79-PZ-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0530 J	0.0530 J		ug/l	TR/G2/G1/V1/V3

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Lead	1.00	0.240 J	0.500 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Lead	1.00	0.480 J	0.500 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	o-Xylene	1.00	0.500 U	0.500 UJ		ug/l	G2
PR79-PZ-001-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V2
PR79-PZ-001-01	N	tert-Butylbenzene	1.00	0.500 U	0.500 UJ		ug/l	G2

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	Nitrate (as N)	50.0	48.0 J	50.0 UJ		ug/l	L/H1
PR79-PZ-001-01	N	Nitrite (as N)	50.0	45.0 J	45.0 J		ug/l	H1/TR

Test Method: VOCSIMC Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-PZ-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	S
PR79-PZ-001-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ		ug/l	G2/V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-001-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V2
PR79-PZ-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0530 J	0.0530 J	0.0530 J	TR/G2/G1/V1/V3

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-001-01	N	Lead	1.00	0.240 J	0.240 J	0.500 U	L

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-001-01	N	o-Xylene	1.00	0.500 U	0.500 U	0.500 UJ	G2
PR79-PZ-001-01	N	tert-Butyl alcohol	10.0	5.00 U	5.00 U	5.00 UJ	V2
PR79-PZ-001-01	N	tert-Butylbenzene	1.00	0.500 U	0.500 U	0.500 UJ	G2

Modified Qualifiers for test method SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-001-01	N	Chloride	2000	2000	2000 J	2000	
PR79-PZ-001-01	N	Nitrate (as N)	50.0	48.0 J	50.0 X	50.0 UJ	L/H1
PR79-PZ-001-01	N	Nitrite (as N)	50.0	45.0 J	45.0 J	45.0 J	H1/TR
PR79-PZ-001-01	N	Sulfate	1000	5900	5900 J	5900	

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	S
PR79-PZ-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	S
PR79-PZ-001-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-PZ-001-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ	0.0250 UJ	G2/V1/V2
PR79-PZ-001-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-PZ-001-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ	0.0500 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
G1	Initial Calibration RRF
G2	Initial Calibration RSD/r^2/r
H1	Test Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
S	Internal standard
TR	Trace Level Detect
V1	ICV
V2	CCV
V3	CCV RRF

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Data Validation Report for SO0801

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG294845 Alkalinity 2600 J ug/L. Result in sample SO0801-1 qualified (J+) since >LOQ and <5X blank.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			SO0801-1 MS only
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?			•	MS only
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQL per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0801

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQL per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			WG294935
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?		•		Ending CCV 02/25/21 Inst N was anlayzed past 12h tune by 11 min and the lab ran two additional CCVs immediately following. No actions.
Was the Calibration within acceptance criteria?		•		See outlier report. Inst N 02/24/21 RSD >15% and min RF not met (per 8270D) for Indeno (1,2,3-cd)pyrene. Result qualified (J) as estimated for minimum RRF exceedances based on discussions with the Corps.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		WG295176-8 Indeno(1,2,3-cd)pyrene below criteria (79.31%). See outlier report.
Were CCVs run at the required frequency and within acceptance criteria?		•		See outlier report. CCV WG295176-9 (analyzed past 12h tune) min RF below criteria for Indeno (1,2,3-cd)pyrene. CCV WG295176-10: Dibenzo (a,h)anthracene %D >20%, Indeno(1,2,3-cd)pyrene min RF below criteria. CCV WG295176-11 min RF below criteria for Indeno (1,2,3-cd)pyrene. Results qualified (J/UJ) as estimated.
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?		•		Calibration not reanalyzed after RSD and ICV outside criteria.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Result qualified as estimated for minimum RRF exceedances based on discussions with the Corps.

Data Validation Report for SO0801

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Did the ICSA have any non-target interferents above the MDL?			•	NA for 2A validation
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWOB12ICW2 Outlier added for dissolved results.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	Serial dilution not performed on sample in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?			•	NA for 2A validation
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Did the ICSA have any non-target interferents above the MDL?			•	NA for 2A validation
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Outlier added for dissolved results.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	serial dilution not performed on sample in this data set
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0801

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			PBWOB17HGW2 ND
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQL per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?		•		ICAL 2/21/21 Inst W RSD outside criteria for o-xylene, tert-Butylbenzene. See outlier report.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			WG295040-8
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		WG295063-4 see outlier report
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		Surr DCA above criteria in PR79-PZ-001-01. Since bias is high and assoc results ND, no quals.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?		•		Lab LOQ for Tertiary-butyl Alcohol (10ug/L) does not match WS#15 (5ug/L) but is <PQL (100ug/L)
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C
Were holding times met?		•		HT for Nitrate/Nitrite not met. Due to lab error, sample SO0801-1 was logged in for nitrate/nitrite by method 353.2 instead of 9056A. The sample was analyzed by 9056A past HT. The results for nitrate/nitrite by method 353.2 were reported in the case narrative for information only. Since the result for nitrate was ND by both 353.2 (within HT) and 9056A (past HT), based on professional judgment, the ND result for nitrate by 9056A was qualified UJ and not rejected. The positive result for nitrite was qualified J. Changes made manually; see outlier report. HT met for Chloride, sulfate (28d) no actions.
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG295097: Nitrate (44 J ug/L), Sulfate (230 J ug/L), see outlier report
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			SO0801-1 MS only
Were MS/MSD recoveries within project acceptance limits?	•			MS %R for nitrate (108%) within limits (90-110% %) in lab data but %R in ADR is above limits (110.1%). Reason code M was manually removed from qualifications.
Was the MS/MSD RPD within project acceptance limits?			•	MS only
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		Based on professional judgment, the nondetect result for for Nitrate was qualified as estimated UJ due to HT.

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.8C, pH<2 based on COC and login. pH not recorded in raw data log sheet. No actions except to note this discrepancy.
Were holding times met?	•			Sample SO0801-1 was analyzed past the 14d hold time (14.16d). Based on professional judgment, since sample was analyzed on the 14th day from collection, no qualifications were made. Qualifiers manually removed.
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?		•		Ending CCV WG295162-5 was analyzed past 12h tune. Two additional CCVs were analyzed immediately following based on DoD criteria for failing CCV. No quals based on 12h tune.
Was the Calibration within acceptance criteria?		•		ICAL Inst C 02/23/21 Chloroform did not meet r>0.99 criteria. Case narrative notes chloroform lab contamination issue that may have affected calibration; MB and LCS meet criteria. ND result for chloroform in sample SO0801-1 was qualified (UJ).
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		WG295162-9 below criteria for chloroform (74.99%), see outlier report.
Were CCVs run at the required frequency and within acceptance criteria?		•		See outlier report: WG295162-4 below criteria for chloroform. WG295162-5, WG295162-7, WG295162-8 above criteria for chloroform.
Were Internal Standard retention times and area criteria within method requirements?		•		IS 1,4-DICHLOROBENZENE-D4 below lower limit (50%RI) but >20%RI in sample PR79-PZ-001-01 and MB. Assoc results for 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene qualified (J+/UJ).
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		ICAL exceedances were noted but calibration was not re-performed.
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SO0845
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW9056A
PR79-PZ-005-01-R	SO0845-13	Water	Field Sample/N			X	X	X	X		X		X		
PR79-PZ-010-01-R	SO0845-14	Water	Field Sample/N							X		X		X	
PR79-PZ-010-01-R	SO0845-2	Water	Field Sample/N	X	X	X	X	X	X		X		X		X
PR79-PZ-014-01-R	SO0845-15	Water	Field Sample/N							X		X		X	
PR79-PZ-014-01-R	SO0845-8	Water	Field Sample/N	X	X	X	X	X	X		X		X		X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SO0845. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Extracted Internal Standard

Lab Blank

Lab Replicate RPD

LCS Recovery

LCS RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 12 results (6.12%) out of the 196 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

BNA method validated to 2B, other methods to 2A

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	Samples on COC for pentachlorophenol only are reported under SO0845_PCP.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.

March 25, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 25, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG294845-1 (LB)/ WG294845-1	Alkalinity, Total (as CaCO3)	2600	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295360-9 (CV)	Benzo (b)fluoranthene	73.04	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-005-01-R	N	Benzo(b)fluoranthene	0.190	0.0950 U	0.0950 UJ		ug/l	V2
PR79-PZ-010-01-R	N	Benzo(b)fluoranthene	0.200	0.0980 U	0.0980 UJ		ug/l	V2
PR79-PZ-014-01-R	N	Benzo(b)fluoranthene	0.190	0.0970 U	0.0970 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB16ICW2 (LB)	Barium	1.000	< 0.23	< 5	ug/l	None/None	L	
PBWOB16ICW2 (LB)	Magnesium	18.00	< 7.8	< 100	ug/l	None/None	L	
PBWOB16ICW2 (LB)	Sodium	32.00	< 24	< 1000	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB16ICW2 (LB)/ PBWOB16ICW2	Barium	1.000	< 0.23	< 5	ug/l	U/None	L	
PBWOB16ICW2 (LB)/ PBWOB16ICW2	Magnesium	18.00	< 7.8	< 100	ug/l	U/None	L	
PBWOB16ICW2 (LB)/ PBWOB16ICW2	Sodium	32.00	< 24	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB16IMW2 (LB)	Cobalt	0.07200	< 0.06	< 1	ug/l	None/None	L	
PBWOB16IMW2 (LB)	Lead	0.09100	< 0.075	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-010-01-R	N	Lead	1.00	0.0910 J	0.500 U		ug/l	L
PR79-PZ-014-01-R	N	Cobalt	1.00	0.0680 J	0.300 U		ug/l	L
PR79-PZ-014-01-R	N	Lead	1.00	0.210 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWOB16IMW2 (LB)/ PBWOB16IMW2	Cobalt	0.07200	< 0.061	< 1	ug/l	U/None	L	
PBWOB16IMW2 (LB)/ PBWOB16IMW2	Lead	0.09100	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-005-01-R	N	Cobalt	1.00	0.200 J	0.300 U		ug/l	L
PR79-PZ-010-01-R	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-PZ-010-01-R	N	Lead	1.00	0.380 J	0.500 U		ug/l	L
PR79-PZ-014-01-R	N	Cobalt	1.00	0.0830 J	0.300 U		ug/l	L
PR79-PZ-014-01-R	N	Lead	1.00	0.360 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG295094-1 (LB)/ WG295094-1	Sulfate	210.0	< 64	< 1000	ug/l	U/None	L	
WG295094-1 (LB)/ WG295094-1	Nitrate (as N)	30.00	< 17	< 50	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-PZ-010-01-R (MS)/ WG295094-5	Sulfate	82.67	90 - 110	30 - 110	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-010-01-R	N	Sulfate	1000	8900	8900 J	-	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-005-01-R	N	Benzo(b)fluoranthene	0.190	0.0950 U	0.0950 UJ		ug/l	V2
PR79-PZ-010-01-R	N	Benzo(b)fluoranthene	0.200	0.0980 U	0.0980 UJ		ug/l	V2
PR79-PZ-014-01-R	N	Benzo(b)fluoranthene	0.190	0.0970 U	0.0970 UJ		ug/l	V2

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-010-01-R	N	Lead	1.00	0.0910 J	0.500 U		ug/l	L
PR79-PZ-014-01-R	N	Cobalt	1.00	0.0680 J	0.300 U		ug/l	L
PR79-PZ-014-01-R	N	Lead	1.00	0.210 J	0.500 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-005-01-R	N	Cobalt	1.00	0.200 J	0.300 U		ug/l	L
PR79-PZ-010-01-R	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-PZ-010-01-R	N	Lead	1.00	0.380 J	0.500 U		ug/l	L
PR79-PZ-014-01-R	N	Cobalt	1.00	0.0830 J	0.300 U		ug/l	L
PR79-PZ-014-01-R	N	Lead	1.00	0.360 J	0.500 U		ug/l	L

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PZ-010-01-R	N	Sulfate	1000	8900	8900 J	-	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-005-01-R	N	Benzo(b)fluoranthene	0.190	0.0950 U	0.0950 U	0.0950 UJ	V2
PR79-PZ-010-01-R	N	Benzo(b)fluoranthene	0.200	0.0980 U	0.0980 U	0.0980 UJ	V2
PR79-PZ-014-01-R	N	Benzo(b)fluoranthene	0.190	0.0970 U	0.0970 U	0.0970 UJ	V2

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PZ-010-01-R	N	Lead	1.00	0.0910 J	0.0910 J	0.500 U	L
PR79-PZ-014-01-R	N	Cobalt	1.00	0.0680 J	0.0680 J	0.300 U	L
PR79-PZ-014-01-R	N	Lead	1.00	0.210 J	0.210 J	0.500 U	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG294845 Alkalinity 2600 J ug/L. No quals required since samples >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?		•		Inst N 02/24/21 and 03/02/21: ending CCV analyzed past 12h tune time by approx 30 min. Two additional CCVs analyzed immediately after. No actions taken.
Was the Calibration within acceptance criteria?	•			ICALs assoc with BNA samples in SO0845 within criteria.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			ICVs associate with BNA samples in SO0845 within criteria.
Were CCVs run at the required frequency and within acceptance criteria?		•		WG295360-9 Benzo(b)fluoranthene %D below criteria; assoc results qualified (J-/UJ).
Were Internal Standard retention times and area criteria within method requirements?	•			criteria met for BNA samples
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?	•			S2MN %R in sample PR79-PZ-005-01-R (92%) flagged in lab data but meets criteria (43-92%). No qualification required.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG294912-1 ND. Note %R of surrogate 2,4-Dibromophenol in MB below criteria (10-130%) but lower limit 10%.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested for BNA. MS analyzed for pentachlorophenol (see SO0845_PCP checklist).
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted for BNA
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were surrogate recoveries within project acceptance limits?			•	NA for this method
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted for BNA analysis
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Did the ICSA have any non-target interferents above the MDL?			•	NA for 2A validation
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			PBWOB16ICW2
Were target analytes in the method blank less than MDL?		•		PBWOB16ICW2: Ba, Mg, Na detected <LOQ. See outlier report. Outliers and qualifications added manually for dissolved results.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?			•	NA for 2A validation
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Did the ICSA have any non-target interferents above the MDL?			•	NA for 2A validation
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Outliers and qualifications added manually for dissolved results.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	LCS only
Were MS/MSD recoveries within project acceptance limits?		•		MS not requested
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	serial dilution not performed on sample in this data set
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-PZ-010-01-R (total only)
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C
Were holding times met?	•			Nitrate/Nitrite 48h; Chloride, Sulfate 28d
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	NA for 2A validation
Were the required minimum levels of calibration standards used in the initial calibration?			•	NA for 2A validation
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	NA for 2A validation
Were all reported analytes for the ICV within the required criteria?			•	NA for 2A validation
Were CCVs run at the required frequency and within acceptance criteria?			•	NA for 2A validation
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG295094 Nitrate 30 J ug/L, Sulfate 210 J ug/L. No actions required since samples >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			SO0845-2 MS only
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?			•	MS only
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SO0845_PCP

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	SO0845_PCP
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM
PR79-BR-003-P1-01-R	SO0845-3	Water	Field Sample/N	X
PR79-BR-003-P2-01-R	SO0845-4	Water	Field Sample/N	X
PR79-BR-003-P3-01-R	SO0845-5	Water	Field Sample/N	X
PR79-BR-003-P4-01-R	SO0845-6	Water	Field Sample/N	X
PR79-BR-005-P1-01-R	SO0845-9	Water	Field Sample/N	X
PR79-BR-005-P2-01-R	SO0845-10	Water	Field Sample/N	X
PR79-BR-005-P3-01-R	SO0845-11	Water	Field Sample/N	X
PR79-BR-005-P4-01-R	SO0845-12	Water	Field Sample/N	X
PR79-BR-DUP02-01-R	SO0845-7	Water	Field Duplicate/FD	X
PR79-MW-007-01-R	SO0845-1	Water	Field Sample/N	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SO0845_PCP. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Extracted Internal Standard

Field Duplicate RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 5 results (50.00%) out of the 10 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

SO0845_PCP is data for pentachlorophenol-only samples (BNA) in lab report SO0845.

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM March 25, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01-R (SD)/ WG294912-4	Pentachlorophenol	14.81	36 - 141	10 - 141	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01-R	N	Pentachlorophenol	0.930	0.470 UM	0.470 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01-R (SD)/ WG294912-4	Pentachlorophenol	2.930	< 0.94	< 0.94	ug/l	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P3-01-R (N)/ SO0845-5	2,4-Dibromophenol	2.310	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-003-P4-01-R (N)/ SO0845-6	2,4-Dibromophenol	1.490	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-005-P4-01-R (N)/ SO0845-12	2,4-Dibromophenol	7.240	10 - 130	10 - 130	percent	J/X	I	
PR79-MW-007-01-R (N)/ SO0845-1	2,4-Dibromophenol	5.820	10 - 130	10 - 130	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P3-01-R	N	Pentachlorophenol	0.950	0.480 U	0.480 UJ		ug/l	I
PR79-BR-003-P4-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I
PR79-BR-005-P4-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I
PR79-MW-007-01-R	N	Pentachlorophenol	1.00	0.530 U	0.530 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM	**Extraction Method: SW3520**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P3-01-R	N	Pentachlorophenol	0.950	0.480 U	0.480 UJ		ug/l	I
PR79-BR-003-P4-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I
PR79-BR-005-P1-01-R	N	Pentachlorophenol	0.930	0.470 UM	0.470 UJ		ug/l	M
PR79-BR-005-P4-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 UJ		ug/l	I
PR79-MW-007-01-R	N	Pentachlorophenol	1.00	0.530 U	0.530 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-003-P3-01-R	N	Pentachlorophenol	0.950	0.480 U	0.480 X	0.480 UJ	I
PR79-BR-003-P4-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 X	0.470 UJ	I
PR79-BR-005-P4-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 X	0.470 UJ	I
PR79-MW-007-01-R	N	Pentachlorophenol	1.00	0.530 U	0.530 X	0.530 UJ	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
D	MS RPD
I	Surrogate recovery outside project limits.
M	MS Recovery
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Data Validation Report for SO0845_PCP

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.6, 3.6, 2.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			PCP only in SO0845_PCP
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?		•		Ending CCVs were analyzed past 12h tune time on 2/24/21 Inst N and 3/2/21 Inst N. Lab analyzed two additional CCVs immediately following. No actions taken based on 12h tune.
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were Internal Standard retention times and area criteria within method requirements?	•			PERYLENE-D12 below lower limit in one sample but since target compound pentachlorophenol is associated with IS PHENANTHRENE-D10, no actions were required.
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report. Surrogate 2,4-DIBROMOPHENOL, associated with target compound pentachlorophenol, was below criteria in several samples. Since lower QC limit is 10%R for this surrogate and recovery in samples was <10% but >0%, based on professional judgment, results were qualified as estimated (J-/UJ) and not rejected. Qualifications were manually changed from X to UJ. Samples were not reanalyzed per client.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-005-P1-01-R
Were MS/MSD recoveries within project acceptance limits?		•		MSD below criteria, MS ok. RPD outside criteria. See outlier report. Parent sample qualified (UJ) as estimated for %R. No qual for RPD since result is ND.
Was the MS/MSD RPD within project acceptance limits?		•		RPD outside criteria, no quals since result is ND.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-003-P1-01-R / PR79-BR-DUP02-01-R

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		Results were qualified as estimated based on surrogate recoveries.

Data Validation Report for TN0005

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	TN0005
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-WL-001-01	TN0005-5	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-WL-001-01	TN0005-8	Water	Field Sample/N							X		X		X		
PR79-WL-002-01	TN0005-4	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-WL-002-01	TN0005-7	Water	Field Sample/N							X		X		X		
PR79-WL-003-01	TN0005-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-WL-003-01	TN0005-6	Water	Field Sample/N							X		X		X		
TB-GW-20201203-1	TN0005-2	Water	Trip Blank/TB												X	
TB-GW-20201203-2	TN0005-3	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WL-001-01	TN0005-5	Water	Field Sample/N	X
PR79-WL-001-01	TN0005-8	Water	Field Sample/N	
PR79-WL-002-01	TN0005-4	Water	Field Sample/N	X
PR79-WL-002-01	TN0005-7	Water	Field Sample/N	
PR79-WL-003-01	TN0005-1	Water	Field Sample/N	X
PR79-WL-003-01	TN0005-6	Water	Field Sample/N	
TB-GW-20201203-1	TN0005-2	Water	Trip Blank/TB	
TB-GW-20201203-2	TN0005-3	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) TN0005. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 106 results (26.97%) out of the 393 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Based on comments from the Corps, issues noted in the lab's case narrative that are not part of a Stage 2A validation were addressed in the review checklist and qualifiers were added.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
VOCSIMC	No additional comments; see Checklist for detail.

March 04, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291508-1 (LB)/ WG291508-1	Alkalinity, Total (as CaCO3)	2200	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Alkalinity, Total (as CaCO3)	5000	7200	7200 J	+	ug/l	L
PR79-WL-003-01	N	Alkalinity, Total (as CaCO3)	5000	4400 J	5000 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291957-8 (IV)	2-Methylnaphthalene	123.7	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V1/C
PR79-WL-002-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V1/C
PR79-WL-003-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1/C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291611-1 (LB)/ WG291611-1	Pyrene	0.07500	< 0.059	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291611-2 (BS)/ WG291611-2	Chrysene	136.0	57 - 120	10 - 120	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Fluorene	144.0	50 - 118	10 - 118	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Benzo (g,h,i)perylene	164.0	44 - 128	10 - 128	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	1,4-Dioxane (p-Dioxane)	170.0	10 - 93	10 - 93	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Indeno(1,2,3-c,d)pyrene	27.30	48 - 130	10 - 130	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Acenaphthylene	3.525	35 - 121	10 - 121	percent	J/X	C	
WG291611-2 (BS)/ WG291611-2	Anthracene	30.65	53 - 119	10 - 119	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Pyrene	40.15	53 - 121	10 - 121	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Benzo (k)fluoranthene	432.5	54 - 125	10 - 125	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Benzo (b)fluoranthene	450.0	53 - 126	10 - 126	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Benzo(a)pyrene	46.90	53 - 120	10 - 120	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Dibenz (a,h)anthracene	490.0	44 - 131	10 - 131	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Fluoranthene	53.00	58 - 120	10 - 120	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Benzo (a)anthracene	58.00	59 - 120	10 - 120	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	C
PR79-WL-001-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Chrysene	0.190	0.0360 JL	0.0360 J		ug/l	C/TR
PR79-WL-001-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	C

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	C
PR79-WL-002-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Chrysene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-003-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	I/C
PR79-WL-003-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Chrysene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WL-003-01 (N)/ TN0005-1	2-Methylnaphthalene -d10	40.70	43 - 92	10 - 92	percent	J/UJ	I	
PR79-WL-003-01 (N)/ TN0005-1	Pyrene-d10	45.70	53 - 166	10 - 166	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-003-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	I/C
PR79-WL-003-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1/C
PR79-WL-003-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Chrysene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291488-1 (LB)/ WG291488-1	Methane	3.100	< 1.9	< 10	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-002-01	N	Methane	10.0	3.10 J	5.00 U		ug/l	L
PR79-WL-003-01	N	Methane	10.0	3.40 J	5.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL09ICW1 (LB)	Zinc	1.200	< 0.72	< 20	ug/l	None/None	L	
PBWNL09ICW1 (LB)	Barium	1.600	< 0.23	< 5	ug/l	None/None	L	
PBWNL09ICW1 (LB)	Iron	5.700	< 5.4	< 100	ug/l	None/None	L	
PBWNL09ICW1 (LB)	Magnesium	8.000	< 7.8	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Iron	100	40.0 J	80.0 U		ug/l	L
PR79-WL-001-01	N	Zinc	20.0	10.1 J	20.0 U		ug/l	L
PR79-WL-002-01	N	Barium	5.00	6.12	6.12 J	+	ug/l	L
PR79-WL-002-01	N	Iron	100	25.0 J	80.0 U		ug/l	L
PR79-WL-003-01	N	Iron	100	40.0 J	80.0 U		ug/l	L
PR79-WL-003-01	N	Zinc	20.0	4.60 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL09ICW1 (LB)/ PBWNL09ICW1	Zinc	1.200	< 0.72	< 20	ug/l	U/None	L	
PBWNL09ICW1 (LB)/ PBWNL09ICW1	Barium	1.600	< 0.23	< 5	ug/l	U/None	L	
PBWNL09ICW1 (LB)/ PBWNL09ICW1	Iron	5.700	< 5.4	< 100	ug/l	U/None	L	
PBWNL09ICW1 (LB)/ PBWNL09ICW1	Magnesium	8.000	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Zinc	20.0	10.2 J	20.0 U		ug/l	L
PR79-WL-002-01	N	Barium	5.00	6.22	6.22 J	+	ug/l	L
PR79-WL-003-01	N	Iron	100	39.0 J	80.0 U		ug/l	L
PR79-WL-003-01	N	Zinc	20.0	4.20 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSWNL09ICW1 (BS)/ LCSWNL09ICW1	Calcium	113.2	87 - 113	40 - 150	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Calcium	100	5620	5620 J	+	ug/l	C
PR79-WL-002-01	N	Calcium	100	13300	13300 J	+	ug/l	C
PR79-WL-003-01	N	Calcium	100	4670	4670 J	+	ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL09IMW1 (LB)	Cobalt	0.08300	< 0.06	< 1	ug/l	None/None	L	
PBWNL09IMW1 (LB)	Cadmium	0.09200	< 0.029	< 1	ug/l	None/None	L	
PBWNL09IMW1 (LB)	Antimony	0.1700	< 0.055	< 1	ug/l	None/None	L	
PBWNL09IMW1 (LB)	Nickel	0.1700	< 0.15	< 2	ug/l	None/None	L	
PBWNL09IMW1 (LB)	Thallium	0.1800	< 0.06	< 1	ug/l	None/None	L	
PBWNL09IMW1 (LB)	Lead	0.3000	< 0.075	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Antimony	1.00	0.130 J	0.500 U		ug/l	L
PR79-WL-001-01	N	Cadmium	1.00	0.0340 J	0.200 U		ug/l	L
PR79-WL-001-01	N	Cobalt	1.00	0.160 J	0.300 U		ug/l	L
PR79-WL-001-01	N	Lead	1.00	0.240 J	0.500 U		ug/l	L
PR79-WL-001-01	N	Nickel	2.00	0.650 J	1.20 U		ug/l	L
PR79-WL-002-01	N	Antimony	1.00	0.500 U	0.500 U		ug/l	L
PR79-WL-002-01	N	Lead	1.00	0.160 J	0.500 U		ug/l	L
PR79-WL-002-01	N	Nickel	2.00	0.390 J	1.20 U		ug/l	L
PR79-WL-003-01	N	Antimony	1.00	0.0580 J	0.500 U		ug/l	L
PR79-WL-003-01	N	Cadmium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WL-003-01	N	Cobalt	1.00	0.893 J	1.00 U		ug/l	L
PR79-WL-003-01	N	Lead	1.00	0.320 J	0.500 U		ug/l	L
PR79-WL-003-01	N	Nickel	2.00	0.370 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL09IMW1 (LB)/ PBWNL09IMW1	Cobalt	0.08300	< 0.061	< 1	ug/l	U/None	L	
PBWNL09IMW1 (LB)/ PBWNL09IMW1	Cadmium	0.09200	< 0.03	< 1	ug/l	U/None	L	
PBWNL09IMW1 (LB)/ PBWNL09IMW1	Antimony	0.1700	< 0.054	< 1	ug/l	U/None	L	
PBWNL09IMW1 (LB)/ PBWNL09IMW1	Nickel	0.1700	< 0.15	< 2	ug/l	U/None	L	
PBWNL09IMW1 (LB)/ PBWNL09IMW1	Thallium	0.1800	< 0.061	< 1	ug/l	U/None	L	
PBWNL09IMW1 (LB)/ PBWNL09IMW1	Lead	0.3000	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Antimony	1.00	0.160 J	0.500 U		ug/l	L
PR79-WL-001-01	N	Cadmium	1.00	0.0540 J	0.200 U		ug/l	L
PR79-WL-001-01	N	Cobalt	1.00	0.130 J	0.300 U		ug/l	L
PR79-WL-001-01	N	Lead	1.00	0.680 J	1.00 U		ug/l	L
PR79-WL-001-01	N	Nickel	2.00	0.310 J	1.20 U		ug/l	L
PR79-WL-002-01	N	Lead	1.00	0.280 J	0.500 U		ug/l	L
PR79-WL-002-01	N	Nickel	2.00	0.200 J	1.20 U		ug/l	L
PR79-WL-003-01	N	Cadmium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WL-003-01	N	Cobalt	1.00	0.969 J	1.00 U		ug/l	L
PR79-WL-003-01	N	Lead	1.00	0.310 J	0.500 U		ug/l	L
PR79-WL-003-01	N	Nickel	2.00	0.430 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291705-8 (IV)	Chloroethane	126.3	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-WL-002-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-WL-003-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
TB-GW-20201203-1	TB	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291705-10 (LB)/ WG291705-10	Carbon disulfide	0.4200	< 0.25	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-GW-20201203-1 (TB)/ TN0005-2	Methylene chloride	1.200	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291447-1 (LB)/ WG291447-1	Chloride	100.0	< 99.3	< 2000	ug/l	U/None	L	
WG291447-1 (LB)/ WG291447-1	Sulfate	160.0	< 64	< 1000	ug/l	U/None	L	
WG291447-1 (LB)/ WG291447-1	Nitrate (as N)	32.00	< 17.4	< 50	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-003-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292162-11 (LB)/ WG292162-11	1,2,4-Trichlorobenzene	0.01800	< 0.0026	< 0.05	ug/l	U/None	L	
WG292162-11 (LB)/ WG292162-11	Benzene	0.02700	< 0.009	< 0.05	ug/l	U/None	L	
WG292162-11 (LB)/ WG292162-11	1,2,3-Trichlorobenzene	0.04600	< 0.0044	< 0.05	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WL-001-01 (N)/ TN0005-5		14.26	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
PR79-WL-002-01 (N)/ TN0005-4		14.28	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: A2320B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Alkalinity, Total (as CaCO3)	5000	7200	7200 J	+	ug/l	L
PR79-WL-003-01	N	Alkalinity, Total (as CaCO3)	5000	4400 J	5000 U		ug/l	L

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V1/C
PR79-WL-001-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	C
PR79-WL-001-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Chrysene	0.190	0.0360 JL	0.0360 J		ug/l	C/TR
PR79-WL-001-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-001-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V1/C
PR79-WL-002-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	C
PR79-WL-002-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Chrysene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-002-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-WL-003-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1/C
PR79-WL-003-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-003-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	I/C
PR79-WL-003-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Chrysene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	I/C
PR79-WL-003-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-WL-003-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-002-01	N	Methane	10.0	3.10 J	5.00 U		ug/l	L
PR79-WL-003-01	N	Methane	10.0	3.40 J	5.00 U		ug/l	L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Iron	100	40.0 J	80.0 U		ug/l	L
PR79-WL-001-01	N	Zinc	20.0	10.1 J	20.0 U		ug/l	L
PR79-WL-002-01	N	Barium	5.00	6.12	6.12 J	+	ug/l	L
PR79-WL-002-01	N	Iron	100	25.0 J	80.0 U		ug/l	L
PR79-WL-003-01	N	Iron	100	40.0 J	80.0 U		ug/l	L
PR79-WL-003-01	N	Zinc	20.0	4.60 J	10.0 U		ug/l	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Calcium	100	5620	5620 J	+	ug/l	C
PR79-WL-001-01	N	Zinc	20.0	10.2 J	20.0 U		ug/l	L
PR79-WL-002-01	N	Calcium	100	13300	13300 J	+	ug/l	C
PR79-WL-002-01	N	Barium	5.00	6.22	6.22 J	+	ug/l	L
PR79-WL-003-01	N	Calcium	100	4670	4670 J	+	ug/l	C
PR79-WL-003-01	N	Iron	100	39.0 J	80.0 U		ug/l	L
PR79-WL-003-01	N	Zinc	20.0	4.20 J	10.0 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Antimony	1.00	0.130 J	0.500 U		ug/l	L
PR79-WL-001-01	N	Cadmium	1.00	0.0340 J	0.200 U		ug/l	L
PR79-WL-001-01	N	Cobalt	1.00	0.160 J	0.300 U		ug/l	L
PR79-WL-001-01	N	Lead	1.00	0.240 J	0.500 U		ug/l	L
PR79-WL-001-01	N	Nickel	2.00	0.650 J	1.20 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-002-01	N	Antimony	1.00	0.500 U	0.500 U		ug/l	L
PR79-WL-002-01	N	Lead	1.00	0.160 J	0.500 U		ug/l	L
PR79-WL-002-01	N	Nickel	2.00	0.390 J	1.20 U		ug/l	L
PR79-WL-003-01	N	Antimony	1.00	0.0580 J	0.500 U		ug/l	L
PR79-WL-003-01	N	Cadmium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WL-003-01	N	Cobalt	1.00	0.893 J	1.00 U		ug/l	L
PR79-WL-003-01	N	Lead	1.00	0.320 J	0.500 U		ug/l	L
PR79-WL-003-01	N	Nickel	2.00	0.370 J	1.20 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Antimony	1.00	0.160 J	0.500 U		ug/l	L
PR79-WL-001-01	N	Cadmium	1.00	0.0540 J	0.200 U		ug/l	L
PR79-WL-001-01	N	Cobalt	1.00	0.130 J	0.300 U		ug/l	L
PR79-WL-001-01	N	Lead	1.00	0.680 J	1.00 U		ug/l	L
PR79-WL-001-01	N	Nickel	2.00	0.310 J	1.20 U		ug/l	L
PR79-WL-002-01	N	Lead	1.00	0.280 J	0.500 U		ug/l	L
PR79-WL-002-01	N	Nickel	2.00	0.200 J	1.20 U		ug/l	L
PR79-WL-003-01	N	Cadmium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WL-003-01	N	Cobalt	1.00	0.969 J	1.00 U		ug/l	L
PR79-WL-003-01	N	Lead	1.00	0.310 J	0.500 U		ug/l	L
PR79-WL-003-01	N	Nickel	2.00	0.430 J	1.20 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-001-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-WL-002-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-WL-003-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
TB-GW-20201203-1	TB	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WL-003-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WL-001-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 U	0.170 UJ	C
PR79-WL-001-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1/C
PR79-WL-001-01	N	Acenaphthene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 X	0.0930 UJ	C
PR79-WL-001-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Fluorene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Naphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PR79-WL-001-01	N	Pentachlorophenol	0.930	0.470 U	0.470 U	0.470 UJ	C
PR79-WL-001-01	N	Phenanthrene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 U	0.170 UJ	C
PR79-WL-002-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1/C
PR79-WL-002-01	N	Acenaphthene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 X	0.0930 UJ	C
PR79-WL-002-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Chrysene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Fluorene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Naphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PR79-WL-002-01	N	Pentachlorophenol	0.930	0.470 U	0.470 U	0.470 UJ	C
PR79-WL-002-01	N	Phenanthrene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PR79-WL-003-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ	0.170 UJ	I/C
PR79-WL-003-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/V1/C
PR79-WL-003-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 X	0.0930 UJ	C/I
PR79-WL-003-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Chrysene	0.190	0.0930 UL	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/C
PR79-WL-003-01	N	Pentachlorophenol	0.930	0.470 U	0.470 U	0.470 UJ	C
PR79-WL-003-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/C

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WL-001-01	N	Iron	100	40.0 J	40.0 J	80.0 U	L
PR79-WL-001-01	N	Zinc	20.0	10.1 J	10.1 J	20.0 U	L
PR79-WL-002-01	N	Barium	5.00	6.12	6.12	6.12 J	L
PR79-WL-002-01	N	Iron	100	25.0 J	25.0 J	80.0 U	L
PR79-WL-003-01	N	Iron	100	40.0 J	40.0 J	80.0 U	L
PR79-WL-003-01	N	Zinc	20.0	4.60 J	4.60 J	10.0 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WL-001-01	N	Antimony	1.00	0.130 J	0.130 J	0.500 U	L
PR79-WL-001-01	N	Cadmium	1.00	0.0340 J	0.0340 J	0.200 U	L
PR79-WL-001-01	N	Cobalt	1.00	0.160 J	0.160 J	0.300 U	L
PR79-WL-001-01	N	Lead	1.00	0.240 J	0.240 J	0.500 U	L
PR79-WL-001-01	N	Nickel	2.00	0.650 J	0.650 J	1.20 U	L
PR79-WL-001-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-WL-002-01	N	Antimony	1.00	0.500 U	0.500 U	0.500 U	L
PR79-WL-002-01	N	Lead	1.00	0.160 J	0.160 J	0.500 U	L
PR79-WL-002-01	N	Nickel	2.00	0.390 J	0.390 J	1.20 U	L
PR79-WL-002-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	
PR79-WL-003-01	N	Antimony	1.00	0.0580 J	0.0580 J	0.500 U	L
PR79-WL-003-01	N	Cadmium	1.00	0.100 J	0.100 J	0.200 U	L
PR79-WL-003-01	N	Cobalt	1.00	0.893 J	0.893 J	1.00 U	L
PR79-WL-003-01	N	Lead	1.00	0.320 J	0.320 J	0.500 U	L
PR79-WL-003-01	N	Nickel	2.00	0.370 J	0.370 J	1.20 U	L
PR79-WL-003-01	N	Thallium	1.00	0.400 U	0.400 U	0.400	

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WL-001-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
PR79-WL-002-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
PR79-WL-003-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
TB-GW-20201203-1	TB	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WL-001-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-001-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-001-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-001-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-001-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-001-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ	0.0500 U	
PR79-WL-002-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-002-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WL-002-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-002-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-002-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WL-002-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ	0.0500 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H1	Test Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect
V1	ICV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG291508 Alkalinity 2.2 J mg/L - see outlier report. Results negated or qualified (J+ since result was >LOQ but <5X MB).
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C, pH not noted in run log but sample receipt indicates preservation criteria were met and no issues were noted in the case narrative. No actions except to note this discrepancy.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed on sample in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C
Were holding times met?	•			Samples were analyzed within HT but re-analyzed past HT due to poor LCS recoveries. The samples were re-extracted using a different prep method from that of the original extraction due to lab limitations. All results were reported in the data package; final results were reported from the initial analysis and qualified for associated QC nonconformances -see below. Note: sample TN0005-1RE was analyzed >2X HT criteria and ND results from reanalysis would have been rejected; therefore, results were reported from initial analysis.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report. Surrogates 2MN and PYR %Rs below criteria for initial analysis of sample TN0005-1; results for B/N compounds qualified (J-/UJ) (all compounds except Pentachlorophenol).
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG291611-1 Pyrene (0.075 J ug/L) - see outlier report. Associated results ND; no quals. WG292169-1 ND.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		LCS WG291611-2: %Rs outside criteria (high and low) for most compounds; acenaphthylene <10%R. The LCS was reanalyzed with similar results (WG291611-2RA). The LCS and assoc samples were re-extracted and re-analyzed outside HT with acceptable recoveries using different prep method due to lab limitations. Based on professional judgment, it appears the performance issues were limited to the LCS (poor surrogate and IS recoveries in the LCS only. Sample surrogates and IS acceptable in both analyses). Sample results were reported from the initial analysis and qualified as estimated (J/UJ) since there was no valid LCS. Qualifications were made to all results, though only compounds with LCS %Rs outside criteria appear on the outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			Lab LOQs meet PQLs on WS#15

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: ICAL RSD and ICV Inst N 1/18/21 not associated with sample results, no quals. ICV N0886 high for 2-methylnaphthalene; assoc results in PR79-WL-003-01, PR79-WL-002-01, PR79-WL-001-01 qualified (J+/UJ) as estimated. ICV N1145 low for acenaphthylene not assoc with samples, no quals. CCVs N1182, N1467 analyzed outside 12h tune window; not assoc with reported sample results, no quals.
Were DoD QSM corrective actions followed if deviations were noted?		•		Per QSM, no samples should be analyzed until ICAL/ICV has passed.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Results were qualified as estimated based on professional judgment due to poor LCS recovery.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG291488-1 methane 3.1 J ug/L - see outlier report, results negated U @ LOD
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	NA for this analysis
Was the laboratory duplicate RPD within project acceptance limits?			•	not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL09ICW1: Ba, Fe, Mg, Zn contamination <LOQ. See outlier report. Outliers and qualifications applied manually for dissolved sample results.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL09IMW1: Sb, Cd, Co, Pb, Ni, Tl contamination. See outlier report, results negated U. Outliers and qualifications manually added for dissolved results.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG291705-10 Carbon disulfide (0.42 J ug/L). No actions since assoc results ND.
Were target analytes in the field blank less than MDL?		•		TB-GW-20201203-1 methylene chloride 1.2 J ug/L. No quals since assoc results ND.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?		•		Lab LOQ for Tertiary-butyl Alcohol (10 ug/L) does not match LOQ on WS#15 but meets PQL (100 ug/L).
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV above criteria for Chloroethane; assoc results qualified (J+/UJ) based on discussion with Corps.
Were DoD QSM corrective actions followed if deviations were noted?		•		Per QSM, no samples should be analyzed until ICAL/ICV has passed.
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data would be rejected

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG291447: Chloride, Nitrate, Sulfate detected below LOQ. Assoc sample qualified J+ for nitrate since result is >LOQ but <5X MB, see outlier report.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			5.2C, pH<2
Were holding times met?	•			Based on professional judgment, since samples were properly preserved and analyzed on 14th day from collection, qualifications were removed by the validator.
Were all requested target analytes reported?	•			per WS#15, 6 VOCs analyzed by VOCSIM
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292162-11: benzene, 123-TCBz, 124-TCBz contamination <LOQ. No quals required since assoc samples ND. WG291919-11 ND
Were target analytes in the field blank less than MDL?	•			TB-GW-20201203-2 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			no issues noted outside 2A scope
Were DoD QSM corrective actions followed if deviations were noted?	•			Note: Contamination in MB >1/2 LOQ but associated samples ND, sample reanalysis not required.
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for TN0061

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	TN0061
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PZ-007-01	TN0061-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PZ-007-01	TN0061-2	Water	Field Sample/N							X		X		X		
TB-GW-20201208-01	TN0061-3	Water	Trip Blank/TB												X	
TB-GW-20201208-02	TN0061-4	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PZ-007-01	TN0061-1	Water	Field Sample/N	X
PZ-007-01	TN0061-2	Water	Field Sample/N	
TB-GW-20201208-01	TN0061-3	Water	Trip Blank/TB	
TB-GW-20201208-02	TN0061-4	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) TN0061. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 24 results (15.09%) out of the 159 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	The Laboratory Control Sample associated with the first extraction batch exceeded QC criteria for multiple compounds. Per QSM requirements the affected sample (PZ-007-01) was re-extracted, along with associated QC samples. This re-extraction was performed outside holding time and using a different procedure (separatory funnel). Because the initial analysis of PZ-007-01 was performed within holding time and had acceptable surrogate recoveries, and the QC exceedances are isolated to the LCS only, professional judgment was used to report the first analysis of sample PZ-007-01 with qualification for LCS performance.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
VOCSIMC	No additional comments; see Checklist for detail.

Kristin Rutherford

March 30, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291743-1 (LB)/ WG291743-1	Alkalinity, Total (as CaCO3)	1900	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291957-8 (IV)/ TN0061-1	2-Methylnaphthalene	123.7	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	C/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291611-1 (LB)/ WG291611-1	Pyrene	0.07500	< 0.059	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291611-2 (BS)/ WG291611-2	Chrysene	136.0	57 - 120	10 - 120	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Fluorene	144.0	50 - 118	10 - 118	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Benzo (g,h,i)perylene	164.0	44 - 128	10 - 128	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	1,4-Dioxane (p-Dioxane)	170.0	10 - 93	10 - 93	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Indeno(1,2,3-c,d)pyrene	27.30	48 - 130	10 - 130	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Acenaphthylene	3.525	35 - 121	10 - 121	percent	J/X	C	
WG291611-2 (BS)/ WG291611-2	Anthracene	30.65	53 - 119	10 - 119	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Pyrene	40.15	53 - 121	10 - 121	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Benzo (k)fluoranthene	432.5	54 - 125	10 - 125	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Benzo (b)fluoranthene	450.0	53 - 126	10 - 126	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Benzo(a)pyrene	46.90	53 - 120	10 - 120	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Dibenz (a,h)anthracene	490.0	44 - 131	10 - 131	percent	J/None	C	
WG291611-2 (BS)/ WG291611-2	Fluoranthene	53.00	58 - 120	10 - 120	percent	J/UJ	C	
WG291611-2 (BS)/ WG291611-2	Benzo (a)anthracene	58.00	59 - 120	10 - 120	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	C
PZ-007-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Chrysene	0.190	0.0470 JL	0.0470 J		ug/l	C/TR
PZ-007-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	C

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL15ICW1 (LB)/ PBWNL15ICW1	Magnesium	11.00	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW7470A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL11HGW2 (LB)/ TN0061-2	Mercury	0.01400	< 0.013	< 0.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	Mercury	0.200	0.0360 J	0.100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL11HGW2 (LB)/ PBWNL11HGW2	Mercury	0.01400	< 0.013	< 0.2	ug/l	U/None	L	
PBWNL18HGW2 (LB)/ PBWNL18HGW2	Mercury	0.05000	< 0.013	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291707-8 (IV)	1,1-Dichloroethene	76.79	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-GW-20201208-01	TB	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291581-1 (LB)/ WG291581-1	Nitrate (as N)	41.00	< 17.4	< 50	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291581-2 (BS)/ WG291581-2	Nitrite (as N)	110.5	90 - 110	70 - 110	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	Nitrite (as N)	50.0	9.70 J	9.70 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM	Extraction Method: SW3520							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	C/V1
PZ-007-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 UJ		ug/l	C
PZ-007-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Chrysene	0.190	0.0470 JL	0.0470 J		ug/l	C/TR
PZ-007-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Fluoranthene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Fluorene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PZ-007-01	N	Pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C

Test Method: SW7470A	Extraction Method: Dissolved							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	Mercury	0.200	0.0360 J	0.100 U		ug/l	L

Test Method: SW8260C	Extraction Method: SW5030							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-GW-20201208-01	TB	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ		ug/l	V1

Test Method: SW9056A	Extraction Method: METHOD							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PZ-007-01	N	Nitrate (as N)	50.0	130	130 J	+	ug/l	L
PZ-007-01	N	Nitrite (as N)	50.0	9.70 J	9.70 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PZ-007-01	N	1,4-Dioxane (p-Dioxane)	0.230	0.170 UL	0.170 U	0.170 UJ	C
PZ-007-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C/V1
PZ-007-01	N	Acenaphthene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Acenaphthylene	0.190	0.0930 UL	0.0930 X	0.0930 UJ	C
PZ-007-01	N	Benzo(b)fluoranthene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Benzo(g,h,i)perylene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Benzo(k)fluoranthene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Dibenz(a,h)anthracene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Fluorene	0.190	0.0930 UL	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Naphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C
PZ-007-01	N	Pentachlorophenol	0.930	0.470 U	0.470 U	0.470 UJ	C
PZ-007-01	N	Phenanthrene	0.190	0.0930 U	0.0930 U	0.0930 UJ	C

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PZ-007-01	N	Mercury	0.200	0.0360 J	0.0360 J	0.100 U	L

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PZ-007-01	N	1,1-Dichloroethene	1.00	0.500 U	0.500 U	0.500 UJ	V1
TB-GW-20201208-01	TB	1,1-Dichloroethene	1.00	0.500 U	0.500 U	0.500 UJ	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
L	Lab Blank
TR	Trace Level Detect
V1	ICV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG291743 alkalinity 1.9mg/L. See outlier report. No qualification necessary as sample >LOQ and >5x MB result.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS not analyzed in duplicate.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Laboratory duplicate not analyzed.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler -2.8C. Based on login information, samples were not frozen; no actions taken.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Laboratory duplicate not analyzed.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	Field duplicate not submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD pair not submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Laboratory duplicate not analyzed.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken.
Were holding times met?	•			Sample PZ-007-01 was re-extracted and re-analyzed past HT due to poor LCS recoveries. The sample was re-extracted using a different prep method from that of the original extraction due to lab capacity limitations. Results from both analyses were reported in the data package. Based on professional judgment, the results from the initial analysis within HT were reported.
Were all requested target analytes reported?	•			Per WS#15
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Pyrene detected in MB WG291611-1. No qualification necessary; assoc sample result was ND.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			Duplicate LCS not analyzed.
Were LCS/LCSD recoveries within project acceptance limits?		•		LCS WG291611-2: %Rs outside criteria (high and low) for most compounds; acenaphthylene<10%R. The LCS was reanalyzed with similar results (WG291611-2RA). The LCS and assoc sample were re-extracted and re-analyzed outside HT with acceptable recoveries using different prep method due to lab limitations. Based on professional judgment, it appears the performance issues were limited to the LCS (poor surrogate and IS recoveries in the LCS only. Sample surrogates and IS acceptable in both analyses). Sample results were reported from the initial analysis and qualified as estimated (J/UJ) since there was no valid LCS. Qualifications were made to all results, though only compounds with LCS %Rs outside criteria appear on the outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	MS/MSD not submitted.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	Field duplicate pair not submitted.
Were QAPP specified laboratory PQLs achieved?	•			No anomalies noted.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of a Stage 2A validation: ICV N0886 above criteria for 2-methylnaphthalene; result in assoc sample PZ-007-01 qualified (UJ). ICV N1145, ICAL 1/18/21, ICV N1453 nonconformances - sample results were not assoc with this cal data. Closing CCVs analyzed outside 12h tune so lab analyzed two additional consecutive CCVs. This nonconformance was not associated with the reported sample results.
Were DoD QSM corrective actions followed if deviations were noted?		•		Calibration and samples not re-analyzed after ICAL and ICV nonconformances.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Results in sample PZ-007-01 were qualified as estimated based on professional judgment.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken. pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS not analyzed in duplicate.
Were LCS/LCSD recoveries within project acceptance limits?			•	
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	MS/MSD not submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were surrogate recoveries within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Laboratory duplicate not submitted.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			No anomalies noted.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken. pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL15ICW1: Mg 11 J ug/L. No quals required since assoc sample results >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	FB not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no results rejected

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken. pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			PBWNL15IMW1 ND
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken. pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL11HGW2 Hg 0.014 J ug/L. Outlier and qualification manually added for dissolved Hg result in assoc sample TN0061-2.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for TN0061

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?				
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken. pH <2 for sample TN0061-3 but not noted on logbook for TN0061-1. Samples preserved with HCl according to COC and no issues were noted in login. Sample TN0061-1 was analyzed within 7d of collection. No qualification required.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			WG291832-2 ND
Were target analytes in the field blank less than MDL?	•			TB-GW-20201208-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			WG291832-1
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			note lab LOQ for Tertiary-butyl Alcohol (10 ug/L) does not match WS#15 LOQ (5 ug/L) but is below PQL (100 ug/L).
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV low recovery for 1,1-DCE; assoc ND results in samples PZ-007-01 and TB-GW-20201208-01 were qualified as estimated (UJ) based on discussion with Corps.
Were DoD QSM corrective actions followed if deviations were noted?		•		Sample analysis should not proceed with ICV outside criteria.
Were any data recommended for rejection (exclusion) in the data validation process?		•		no rejections

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken.
Were holding times met?	•			
Were all requested target analytes reported?	•			Chloride, nitrate, nitrite, sulfate.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG291581 Nitrate 0.041J mg/L. Nitrate result in TN0061-1 qualified (J+) since result is >LOQ and <5X MB. See outlier report.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS not analyzed in duplicate.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	Laboratory duplicate not analyzed.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	Field duplicate not submitted.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temp -2.8C upon receipt. Based on login information, samples were not frozen; no actions taken. pH <2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			TB-GW-20201208-02 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS not requested
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			no issues
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Data Validation Report for TN0371

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	TN0371
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-BR-002-P1-01	TN0371-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-002-P1-01	TN0371-8	Water	Field Sample/N							X		X		X		
PR79-BR-002-P2-01	TN0371-2	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-002-P2-01	TN0371-9	Water	Field Sample/N							X		X		X		
PR79-BR-002-P3-01	TN0371-10	Water	Field Sample/N							X		X		X		
PR79-BR-002-P3-01	TN0371-3	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-002-P4-01	TN0371-11	Water	Field Sample/N							X		X		X		
PR79-BR-002-P4-01	TN0371-4	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-002-P5-01	TN0371-12	Water	Field Sample/N							X		X		X		
PR79-BR-002-P5-01	TN0371-5	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
TB-GW-20201218-01-01	TN0371-6	Water	Trip Blank/TB												X	
TB-GW-20201218-02-01	TN0371-7	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-BR-002-P1-01	TN0371-1	Water	Field Sample/N	X
PR79-BR-002-P1-01	TN0371-8	Water	Field Sample/N	
PR79-BR-002-P2-01	TN0371-2	Water	Field Sample/N	X
PR79-BR-002-P2-01	TN0371-9	Water	Field Sample/N	
PR79-BR-002-P3-01	TN0371-10	Water	Field Sample/N	
PR79-BR-002-P3-01	TN0371-3	Water	Field Sample/N	X
PR79-BR-002-P4-01	TN0371-11	Water	Field Sample/N	
PR79-BR-002-P4-01	TN0371-4	Water	Field Sample/N	X
PR79-BR-002-P5-01	TN0371-12	Water	Field Sample/N	
PR79-BR-002-P5-01	TN0371-5	Water	Field Sample/N	X
TB-GW-20201218-01-01	TN0371-6	Water	Trip Blank/TB	
TB-GW-20201218-02-01	TN0371-7	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) TN0371. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 146 results (23.29%) out of the 627 results (sample and field QC samples) reported are qualified based on review and 5 results (0.80%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

VOCs, VOCSIM SIM, BNA, TAL Metals/Hg (Total and Field Filtered): S2BVEM
TOC, Sulfide, Alkalinity, Dissolved gasses (M, E, E), Nitrate as N, Nitrite as N, Sulfate, Chloride are all S2AVEM. Review items not assessed as part of a 2A validation are marked NA.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM February 23, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292300-1 (LB)/ WG292300-1	Alkalinity, Total (as CaCO3)	2200	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292300-2 (BS)/ WG292300-2	Alkalinity, Total (as CaCO3)	108300	80 - 120	70 - 120	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Alkalinity, Total (as CaCO3)	5000	43000	43000 J	+	ug/l	C
PR79-BR-002-P2-01	N	Alkalinity, Total (as CaCO3)	5000	48000	48000 J	+	ug/l	C
PR79-BR-002-P3-01	N	Alkalinity, Total (as CaCO3)	5000	46000	46000 J	+	ug/l	C
PR79-BR-002-P4-01	N	Alkalinity, Total (as CaCO3)	5000	47000	47000 J	+	ug/l	C
PR79-BR-002-P5-01	N	Alkalinity, Total (as CaCO3)	5000	130000	130000 J	+	ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A2320B, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (MS)/ WG292300-3	Alkalinity, Total (as CaCO3)	-296.5	80 - 120	30 - 120	percent	J/X	M	Spike amount Insignificant
PR79-BR-002-P1-01 (SD)/ WG292300-4	Alkalinity, Total (as CaCO3)	-296.5	80 - 120	30 - 120	percent	J/X	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A5310B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292303-1 (LB)/ WG292303-1	Total Organic Carbon	0.1600	< 0.1	< 1	mg/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for A5310B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Total Organic Carbon	1.00	0.590 J	1.00 U		mg/l	L
PR79-BR-002-P2-01	N	Total Organic Carbon	1.00	0.690 J	1.00 U		mg/l	L
PR79-BR-002-P3-01	N	Total Organic Carbon	1.00	0.540 J	1.00 U		mg/l	L
PR79-BR-002-P4-01	N	Total Organic Carbon	1.00	0.420 J	0.500 U		mg/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG293072-2 (CV)	2-Methylnaphthalene	157.0	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V2
PR79-BR-002-P2-01	N	2-Methylnaphthalene	0.200	0.100 U	0.100 UJ		ug/l	V2
PR79-BR-002-P3-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V2
PR79-BR-002-P4-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ		ug/l	I/V2
PR79-BR-002-P5-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration RSD/r^2/r

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
GCMS-N 01/06/21	Indeno(1,2,3-c,d)pyrene	17.56	< 15	< 15	rsd	J/UJ	G2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RSD/r^2/r for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	G2
PR79-BR-002-P2-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.100 U	0.100 UJ		ug/l	G2
PR79-BR-002-P3-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/G2
PR79-BR-002-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ		ug/l	I/G2
PR79-BR-002-P5-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	G2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292998-8 (IV)	2-Methylnaphthalene	143.6	80 - 120	50 - 150	percent	J/None	V1	
WG292998-8 (IV)	Acenaphthylene	78.88	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Acenaphthylene	0.190	0.0930 UM	0.0930 UJ		ug/l	M/V1
PR79-BR-002-P2-01	N	Acenaphthylene	0.200	0.100 U	0.100 UJ		ug/l	V1
PR79-BR-002-P3-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1
PR79-BR-002-P4-01	N	Acenaphthylene	0.190	0.0960 U	0.0960 UJ		ug/l	I/V1
PR79-BR-002-P5-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292411-2 (BS)/ WG292411-2	Pentachlorophenol	0.000	36 - 141	10 - 141	percent	J/X	C	
WG292411-2 (BS)/ WG292411-2	Benzo(a)pyrene	20.45	53 - 120	10 - 120	percent	J/UJ	C	
WG292411-2 (BS)/ WG292411-2	Anthracene	43.00	53 - 119	10 - 119	percent	J/UJ	C	
WG292411-2 (BS)/ WG292411-2	Benzo (a)anthracene	48.65	59 - 120	10 - 120	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Anthracene	0.190	0.0930 ULMM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULMM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 X		ug/l	C/M/I
PR79-BR-002-P2-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-002-P2-01	N	Benzo(a)anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-002-P2-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-002-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 X		ug/l	C/I
PR79-BR-002-P3-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X		ug/l	C/I
PR79-BR-002-P4-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(a)anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 X		ug/l	C/I
PR79-BR-002-P5-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-002-P5-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-002-P5-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-002-P5-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (MS)/ WG292411-3	Pentachlorophenol	0.000	36 - 141	10 - 141	percent	J/X	M	
PR79-BR-002-P1-01 (MS)/ WG292411-3	1,4-Dioxane (p-Dioxane)	112.3	10 - 93	10 - 93	percent	J/None	M	
PR79-BR-002-P1-01 (MS)/ WG292411-3	Benzo(a)pyrene	17.11	53 - 120	10 - 120	percent	J/UJ	M	
PR79-BR-002-P1-01 (MS)/ WG292411-3	Anthracene	21.93	53 - 119	10 - 119	percent	J/UJ	M	
PR79-BR-002-P1-01 (MS)/ WG292411-3	Pyrene	25.67	53 - 121	10 - 121	percent	J/UJ	M	
PR79-BR-002-P1-01 (MS)/ WG292411-3	Acenaphthylene	34.22	35 - 121	10 - 121	percent	J/UJ	M	
PR79-BR-002-P1-01 (MS)/ WG292411-3	Benzo (a)anthracene	53.48	59 - 120	10 - 120	percent	J/UJ	M	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Pentachlorophenol	0.000	36 - 141	10 - 141	percent	J/X	M	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Anthracene	43.88	53 - 119	10 - 119	percent	J/UJ	M	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Benzo(a)pyrene	45.92	53 - 120	10 - 120	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Acenaphthylene	0.190	0.0930 UM	0.0930 UJ		ug/l	M/V1
PR79-BR-002-P1-01	N	Anthracene	0.190	0.0930 ULMM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULMM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 X		ug/l	C/M/I
PR79-BR-002-P1-01	N	Pyrene	0.190	0.0930 UM	0.0930 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (SD)/ WG292411-4	Acenaphthylene	0.2100	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Anthracene	0.4500	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Benzo(a)pyrene	0.5800	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Pyrene	0.7200	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-002-P1-01 (SD)/ WG292411-4	1,4-Dioxane (p-Dioxane)	1.100	< 0.23	< 0.23	ug/l	J/None	D	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Benzo (a)anthracene	26.09	< 20	< 20	rpd	J/None	D	
PR79-BR-002-P1-01 (SD)/ WG292411-4	Benzo (g,h,i)perylene	26.09	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (N)/ TN0371-1	2,4-Dibromophenol	7.780	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-002-P2-01 (N)/ TN0371-2	2,4-Dibromophenol	8.090	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-002-P3-01 (N)/ TN0371-3	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-002-P3-01 (N)/ TN0371-3	2-Methylnaphthalene-d10	38.40	43 - 92	10 - 92	percent	J/UJ	I	
PR79-BR-002-P4-01 (N)/ TN0371-4	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-002-P4-01 (N)/ TN0371-4	Pyrene-d10	22.50	53 - 166	10 - 166	percent	J/UJ	I	
PR79-BR-002-P5-01 (N)/ TN0371-5	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 X		ug/l	C/M/I
PR79-BR-002-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 X		ug/l	C/I
PR79-BR-002-P3-01	N	1,4-Dioxane (p-Dioxane)	0.230	2.40	2.40 J	-	ug/l	I
PR79-BR-002-P3-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V2
PR79-BR-002-P3-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1
PR79-BR-002-P3-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Chrysene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Fluorene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/G2
PR79-BR-002-P3-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X		ug/l	C/I
PR79-BR-002-P3-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P4-01	N	1,4-Dioxane (p-Dioxane)	0.240	1.10	1.10 J	-	ug/l	I

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P4-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ		ug/l	I/V2
PR79-BR-002-P4-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Acenaphthylene	0.190	0.0960 U	0.0960 UJ		ug/l	I/V1
PR79-BR-002-P4-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(a)anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(b)fluoranthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Benzo(g,h,i)perylene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Benzo(k)fluoranthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Chrysene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Dibenz(a,h)anthracene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Fluoranthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Fluorene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ		ug/l	I/G2
PR79-BR-002-P4-01	N	Naphthalene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 X		ug/l	C/I
PR79-BR-002-P4-01	N	Phenanthrene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Pyrene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P5-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method RSK175, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292696-1 (LB)/ WG292696-1	Methane	2.200	< 1.9	< 10	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Methane	10.0	3.00 J	5.00 U		ug/l	L
PR79-BR-002-P2-01	N	Methane	10.0	2.90 J	5.00 U		ug/l	L
PR79-BR-002-P3-01	N	Methane	10.0	2.80 J	5.00 U		ug/l	L
PR79-BR-002-P4-01	N	Methane	10.0	2.90 J	5.00 U		ug/l	L
PR79-BR-002-P5-01	N	Methane	10.0	3.10 J	5.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB INL28A 12/28/20 1900 (CB)	Sodium	24.17	< 24	< 1000	ug/l	None/None	B2	
CCB INL28A 12/28/20 1951 (CB)	Calcium	13.39	< 11	< 100	ug/l	None/None	B2	
CCB INL28A 12/28/20 1951 (CB)	Iron	9.536	< 5.4	< 100	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Iron	100	8.60 J	80.0 U		ug/l	B2
PR79-BR-002-P2-01	N	Iron	100	6.90 J	80.0 U		ug/l	B2
PR79-BR-002-P3-01	N	Iron	100	7.60 J	80.0 U		ug/l	B2
PR79-BR-002-P4-01	N	Iron	100	5.50 J	80.0 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB 12/2/20 1900 (CB)	Copper	-0.6440	< 0.63	< 25	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Copper	25.0	1.50 J	1.50 J	-	ug/l	TR/B3
PR79-BR-002-P2-01	N	Copper	25.0	3.00 J	3.00 J	-	ug/l	TR/B3
PR79-BR-002-P3-01	N	Copper	25.0	2.40 J	2.40 J	-	ug/l	TR/B3
PR79-BR-002-P4-01	N	Copper	25.0	2.40 J	2.40 J	-	ug/l	TR/B3
PR79-BR-002-P5-01	N	Copper	25.0	1.20 J	1.20 J	-	ug/l	TR/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL22ICW2 (LB)	Magnesium	14.00	< 7.8	< 100	ug/l	None/None	L	
PBWNL22ICW2 (LB)	Aluminum	17.00	< 15	< 300	ug/l	None/None	L	
PBWNL22ICW2 (LB)	Sodium	27.00	< 24	< 1000	ug/l	None/None	L	
PBWNL22ICW2 (LB)	Potassium	61.00	< 41	< 1000	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P5-01	N	Aluminum	300	28.0 J	100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (MS)/ TN0371-008S	Sodium	115.9	87 - 115	30 - 125	percent	J/None	M	
PR79-BR-002-P1-01 (MS)/ TN0371-008S	Calcium	145.6	87 - 113	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-BR-002-P1-01 (MS)/ TN0371-8	Calcium	79.20	87 - 113	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Sodium	1000	7300 N	7300 J	+	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB INL28A 12/28/20 1900 (CB)	Sodium	24.17	< 24	< 1000	ug/l	None/None	B2	
CCB INL28A 12/28/20 1951 (CB)	Iron	9.536	< 5.4	< 100	ug/l	None/None	B2	
CCB INL28A 12/28/20 2040 (CB)	Calcium	13.39	< 11	< 100	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Iron	100	8.60 J	80.0 U		ug/l	B2
PR79-BR-002-P2-01	N	Iron	100	6.90 J	80.0 U		ug/l	B2
PR79-BR-002-P3-01	N	Iron	100	7.60 J	80.0 U		ug/l	B2
PR79-BR-002-P4-01	N	Iron	100	5.50 J	80.0 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB INL28A 12/28/20 1900 (CB)	Copper	-0.6440	< 0.63	< 25	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Copper	25.0	3.60 J	3.60 J	-	ug/l	TR/B3
PR79-BR-002-P2-01	N	Copper	25.0	6.20 J	6.20 J	-	ug/l	TR/B3
PR79-BR-002-P3-01	N	Copper	25.0	4.30 J	4.30 J	-	ug/l	TR/B3
PR79-BR-002-P4-01	N	Copper	25.0	2.60 J	2.60 J	-	ug/l	TR/B3
PR79-BR-002-P5-01	N	Copper	25.0	4.70 J	4.70 J	-	ug/l	TR/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL22ICW2 (LB)/ PBWNL22ICW2	Magnesium	14.00	< 7.8	< 100	ug/l	U/None	L	
PBWNL22ICW2 (LB)/ PBWNL22ICW2	Aluminum	17.00	< 15	< 300	ug/l	U/None	L	
PBWNL22ICW2 (LB)/ PBWNL22ICW2	Sodium	27.00	< 24	< 1000	ug/l	U/None	L	
PBWNL22ICW2 (LB)/ PBWNL22ICW2	Potassium	61.00	< 41	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Aluminum	300	31.0 J	100 U		ug/l	L
PR79-BR-002-P5-01	N	Aluminum	300	22.0 J	100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL22IMW2 (LB)	Lead	0.08700	< 0.075	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Lead	1.00	0.580 J	1.00 U		ug/l	L
PR79-BR-002-P2-01	N	Lead	1.00	0.778 J	1.00 U		ug/l	L
PR79-BR-002-P3-01	N	Lead	1.00	0.380 J	0.500 U		ug/l	L
PR79-BR-002-P4-01	N	Lead	1.00	0.758 J	1.00 U		ug/l	L
PR79-BR-002-P5-01	N	Lead	1.00	0.250 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL22IMW2 (LB)/ PBWNL22IMW2	Lead	0.08700	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P5-01	N	Lead	1.00	0.580 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL24HGW2 (LB)	Mercury	0.02900	< 0.013	< 0.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Mercury	0.200	0.0360 JA	0.100		ug/l	L
PR79-BR-002-P2-01	N	Mercury	0.200	0.0410 J	0.100		ug/l	L
PR79-BR-002-P3-01	N	Mercury	0.200	0.0380 J	0.100		ug/l	L
PR79-BR-002-P4-01	N	Mercury	0.200	0.0280 J	0.100		ug/l	L
PR79-BR-002-P5-01	N	Mercury	0.200	0.0380 J	0.100		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL24HGW2 (LB)/ PBWNL24HGW2	Mercury	0.02900	< 0.013	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Mercury	0.200	0.0420 JA	0.100 U		ug/l	L
PR79-BR-002-P2-01	N	Mercury	0.200	0.0250 J	0.100 U		ug/l	L
PR79-BR-002-P3-01	N	Mercury	0.200	0.0390 J	0.100 U		ug/l	L
PR79-BR-002-P4-01	N	Mercury	0.200	0.0240 J	0.100 U		ug/l	L
PR79-BR-002-P5-01	N	Mercury	0.200	0.0200 J	0.100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292785-12 (CV)	4-Methyl-2-pentanone (MIBK)	121.5	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P5-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
TB-GW-20201218-01-01	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292785-10 (LB)/ WG292785-10	Methylene chloride	1.200	< 1.1	< 5	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Methylene chloride	5.00	4.00 J	5.00 U		ug/l	L
PR79-BR-002-P5-01	N	Methylene chloride	5.00	1.40 J	2.50 U		ug/l	L
TB-GW-20201218-01-01	TB	Methylene chloride	5.00	1.70 J	2.50 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-GW-20201218-01-01 (TB)/ TN0371-6	Methylene chloride	1.700	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292518-1 (LB)/ WG292518-1	Nitrate (as N)	36.00	< 17.4	< 50	ug/l	U/None	L	
WG292661-1 (LB)/ WG292661-1	Sulfate	180.0	< 64	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Nitrate (as N)	50.0	65.0	65.0 J		ug/l	L/H1
PR79-BR-002-P5-01	N	Nitrate (as N)	50.0	42.0 J	50.0 UJ		ug/l	L/H1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (MS)/ WG292518-4	Nitrite (as N)	112.8	90 - 110	30 - 110	percent	J/None	M	
PR79-BR-002-P1-01 (SD)/ WG292518-5	Nitrite (as N)	112.8	90 - 110	30 - 110	percent	J/None	M	
PR79-BR-002-P1-01 (SD)/ WG292661-5	Sulfate	-149.3	90 - 110	30 - 110	percent	J/X	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Nitrite (as N)	50.0	14.0 J	14.0 J		ug/l	H1/M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (SD)/ WG292661-5	Sulfate	9000	< 1000	< 1000	ug/l	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P1-01 (N)/ TN0371-1	Nitrite (as N)	74.23	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P1-01 (N)/ TN0371-1	Nitrate (as N)	74.23	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P2-01 (N)/ TN0371-2	Nitrite (as N)	75.08	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P2-01 (N)/ TN0371-2	Nitrate (as N)	75.08	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P3-01 (N)/ TN0371-3	Nitrite (as N)	75.07	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P3-01 (N)/ TN0371-3	Nitrate (as N)	75.07	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P4-01 (N)/ TN0371-4	Nitrite (as N)	75.22	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P4-01 (N)/ TN0371-4	Nitrate (as N)	75.22	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P5-01 (N)/ TN0371-5	Nitrite (as N)	75.45	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL
PR79-BR-002-P5-01 (N)/ TN0371-5	Nitrate (as N)	75.45	< 48	< 96	hours	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Test Hold Time for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Nitrate (as N)	50.0	65.0	65.0 J		ug/l	L/H1
PR79-BR-002-P1-01	N	Nitrite (as N)	50.0	14.0 J	14.0 J		ug/l	H1/M/TR
PR79-BR-002-P2-01	N	Nitrate (as N)	50.0	240	240 J	-	ug/l	H1
PR79-BR-002-P2-01	N	Nitrite (as N)	50.0	13.0 J	13.0 J	-	ug/l	H1/TR
PR79-BR-002-P3-01	N	Nitrate (as N)	50.0	250	250 J	-	ug/l	H1
PR79-BR-002-P3-01	N	Nitrite (as N)	50.0	14.0 J	14.0 J	-	ug/l	H1/TR
PR79-BR-002-P4-01	N	Nitrate (as N)	50.0	200	200 J	-	ug/l	H1
PR79-BR-002-P4-01	N	Nitrite (as N)	50.0	30.0 J	30.0 J	-	ug/l	H1/TR
PR79-BR-002-P5-01	N	Nitrate (as N)	50.0	42.0 J	50.0 UJ		ug/l	L/H1
PR79-BR-002-P5-01	N	Nitrite (as N)	50.0	160	160 J	-	ug/l	H1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292786-2 (LB)/ WG292786-2	Chloroform	0.02400	< 0.0061	< 0.1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-002-P2-01 (N)/ TN0371-2	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	58.90	70 - 130	10 - 130	percent	J/UJ	I	
PR79-BR-002-P3-01 (N)/ TN0371-3	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	59.60	70 - 130	10 - 130	percent	J/UJ	I	
PR79-BR-002-P4-01 (N)/ TN0371-4	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	54.90	70 - 130	10 - 130	percent	J/UJ	I	
PR79-BR-002-P4-01 (N)/ TN0371-4	Toluene-d8	67.90	70 - 130	10 - 130	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P2-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P2-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P2-01	N	Benzene	0.0500	0.0270 J	0.0270 J	-	ug/l	I/TR
PR79-BR-002-P2-01	N	Chloroform	0.100	0.360	0.360 J	-	ug/l	I
PR79-BR-002-P2-01	N	Trichloroethene (TCE)	0.0500	120 E	120 J	-	ug/l	I
PR79-BR-002-P2-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-BR-002-P3-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P3-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P3-01	N	Benzene	0.0500	0.0430 J	0.0430 J	-	ug/l	I/TR
PR79-BR-002-P3-01	N	Chloroform	0.100	0.370	0.370 J	-	ug/l	I
PR79-BR-002-P3-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-BR-002-P4-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P4-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P4-01	N	Benzene	0.0500	0.0290 J	0.0290 J	-	ug/l	I/TR
PR79-BR-002-P4-01	N	Chloroform	0.100	0.970	0.970 J	-	ug/l	I
PR79-BR-002-P4-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: A2320B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Alkalinity, Total (as CaCO3)	5000	43000	43000 J	+	ug/l	C
PR79-BR-002-P2-01	N	Alkalinity, Total (as CaCO3)	5000	48000	48000 J	+	ug/l	C
PR79-BR-002-P3-01	N	Alkalinity, Total (as CaCO3)	5000	46000	46000 J	+	ug/l	C
PR79-BR-002-P4-01	N	Alkalinity, Total (as CaCO3)	5000	47000	47000 J	+	ug/l	C
PR79-BR-002-P5-01	N	Alkalinity, Total (as CaCO3)	5000	130000	130000 J	+	ug/l	C

Test Method: A5310B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Total Organic Carbon	1.00	0.590 J	1.00 U		mg/l	L
PR79-BR-002-P2-01	N	Total Organic Carbon	1.00	0.690 J	1.00 U		mg/l	L
PR79-BR-002-P3-01	N	Total Organic Carbon	1.00	0.540 J	1.00 U		mg/l	L
PR79-BR-002-P4-01	N	Total Organic Carbon	1.00	0.420 J	0.500 U		mg/l	L

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V2
PR79-BR-002-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	G2
PR79-BR-002-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Acenaphthylene	0.190	0.0930 UM	0.0930 UJ		ug/l	M/V1
PR79-BR-002-P1-01	N	Anthracene	0.190	0.0930 ULMM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULMM	0.0930 UJ		ug/l	C/M
PR79-BR-002-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 X		ug/l	C/M/I
PR79-BR-002-P1-01	N	Pyrene	0.190	0.0930 UM	0.0930 UJ		ug/l	M
PR79-BR-002-P2-01	N	2-Methylnaphthalene	0.200	0.100 U	0.100 UJ		ug/l	V2
PR79-BR-002-P2-01	N	Acenaphthylene	0.200	0.100 U	0.100 UJ		ug/l	V1
PR79-BR-002-P2-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.100 U	0.100 UJ		ug/l	G2
PR79-BR-002-P2-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-002-P2-01	N	Benzo(a)anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-002-P2-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-002-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 X		ug/l	C/I
PR79-BR-002-P3-01	N	1,4-Dioxane (p-Dioxane)	0.230	2.40	2.40 J	-	ug/l	I
PR79-BR-002-P3-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V2
PR79-BR-002-P3-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1
PR79-BR-002-P3-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C/I
PR79-BR-002-P3-01	N	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P3-01	N	Chrysene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Fluorene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/G2
PR79-BR-002-P3-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X		ug/l	C/I
PR79-BR-002-P3-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P3-01	N	Pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-002-P4-01	N	1,4-Dioxane (p-Dioxane)	0.240	1.10	1.10 J	-	ug/l	I
PR79-BR-002-P4-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ		ug/l	I/V2
PR79-BR-002-P4-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Acenaphthylene	0.190	0.0960 U	0.0960 UJ		ug/l	I/V1
PR79-BR-002-P4-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(a)anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C/I
PR79-BR-002-P4-01	N	Benzo(b)fluoranthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Benzo(g,h,i)perylene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Benzo(k)fluoranthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Chrysene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Dibenz(a,h)anthracene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Fluoranthene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Fluorene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ		ug/l	I/G2
PR79-BR-002-P4-01	N	Naphthalene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 X		ug/l	C/I
PR79-BR-002-P4-01	N	Phenanthrene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P4-01	N	Pyrene	0.190	0.0960 U	0.0960 UJ		ug/l	I
PR79-BR-002-P5-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	V2
PR79-BR-002-P5-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	V1
PR79-BR-002-P5-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	G2
PR79-BR-002-P5-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X		ug/l	C/I
PR79-BR-002-P5-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-002-P5-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-002-P5-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Methane	10.0	3.00 J	5.00 U		ug/l	L
PR79-BR-002-P2-01	N	Methane	10.0	2.90 J	5.00 U		ug/l	L
PR79-BR-002-P3-01	N	Methane	10.0	2.80 J	5.00 U		ug/l	L
PR79-BR-002-P4-01	N	Methane	10.0	2.90 J	5.00 U		ug/l	L

Table of All Qualified Results

Test Method: RSK175 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P5-01	N	Methane	10.0	3.10 J	5.00 U		ug/l	L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Copper	25.0	1.50 J	1.50 J	-	ug/l	TR/B3
PR79-BR-002-P1-01	N	Iron	100	8.60 J	80.0 U		ug/l	B2
PR79-BR-002-P1-01	N	Sodium	1000	7300 N	7300 J	+	ug/l	M
PR79-BR-002-P2-01	N	Copper	25.0	3.00 J	3.00 J	-	ug/l	TR/B3
PR79-BR-002-P2-01	N	Iron	100	6.90 J	80.0 U		ug/l	B2
PR79-BR-002-P3-01	N	Copper	25.0	2.40 J	2.40 J	-	ug/l	TR/B3
PR79-BR-002-P4-01	N	Copper	25.0	2.40 J	2.40 J	-	ug/l	TR/B3
PR79-BR-002-P4-01	N	Iron	100	5.50 J	80.0 U		ug/l	B2
PR79-BR-002-P5-01	N	Aluminum	300	28.0 J	100 U		ug/l	L
PR79-BR-002-P5-01	N	Copper	25.0	1.20 J	1.20 J	-	ug/l	TR/B3

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Copper	25.0	3.60 J	3.60 J	-	ug/l	TR/B3
PR79-BR-002-P1-01	N	Iron	100	8.60 J	80.0 U		ug/l	B2
PR79-BR-002-P1-01	N	Aluminum	300	31.0 J	100 U		ug/l	L
PR79-BR-002-P2-01	N	Copper	25.0	6.20 J	6.20 J	-	ug/l	TR/B3
PR79-BR-002-P2-01	N	Iron	100	13.0 J	80.0 U		ug/l	B2
PR79-BR-002-P3-01	N	Copper	25.0	4.30 J	4.30 J	-	ug/l	TR/B3
PR79-BR-002-P3-01	N	Iron	100	7.60 J	80.0 U		ug/l	B2
PR79-BR-002-P4-01	N	Copper	25.0	2.60 J	2.60 J	-	ug/l	TR/B3
PR79-BR-002-P4-01	N	Iron	100	32.0 J	80.0 U		ug/l	B2
PR79-BR-002-P5-01	N	Copper	25.0	4.70 J	4.70 J	-	ug/l	TR/B3
PR79-BR-002-P5-01	N	Aluminum	300	22.0 J	100 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Lead	1.00	0.580 J	1.00 U		ug/l	L
PR79-BR-002-P2-01	N	Lead	1.00	0.778 J	1.00 U		ug/l	L
PR79-BR-002-P3-01	N	Lead	1.00	0.380 J	0.500 U		ug/l	L
PR79-BR-002-P4-01	N	Lead	1.00	0.758 J	1.00 U		ug/l	L
PR79-BR-002-P5-01	N	Lead	1.00	0.250 J	0.500 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P5-01	N	Lead	1.00	0.580 J	1.00 U		ug/l	L

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Mercury	0.200	0.0360 JA	0.100		ug/l	L

Table of All Qualified Results

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P2-01	N	Mercury	0.200	0.0410 J	0.100		ug/l	L
PR79-BR-002-P3-01	N	Mercury	0.200	0.0380 J	0.100		ug/l	L
PR79-BR-002-P4-01	N	Mercury	0.200	0.0280 J	0.100		ug/l	L
PR79-BR-002-P5-01	N	Mercury	0.200	0.0380 J	0.100		ug/l	L

Test Method: SW7470A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Mercury	0.200	0.0420 JA	0.100 U		ug/l	L
PR79-BR-002-P2-01	N	Mercury	0.200	0.0250 J	0.100 U		ug/l	L
PR79-BR-002-P3-01	N	Mercury	0.200	0.0390 J	0.100 U		ug/l	L
PR79-BR-002-P4-01	N	Mercury	0.200	0.0240 J	0.100 U		ug/l	L
PR79-BR-002-P5-01	N	Mercury	0.200	0.0200 J	0.100 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P1-01	N	Methylene chloride	5.00	4.00 J	5.00 U		ug/l	L
PR79-BR-002-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P5-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
PR79-BR-002-P5-01	N	Methylene chloride	5.00	1.40 J	2.50 U		ug/l	L
TB-GW-20201218-01-01	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V2
TB-GW-20201218-01-01	TB	Methylene chloride	5.00	1.70 J	2.50 U		ug/l	L

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P1-01	N	Nitrate (as N)	50.0	65.0	65.0 J		ug/l	L/H1
PR79-BR-002-P1-01	N	Nitrite (as N)	50.0	14.0 J	14.0 J		ug/l	H1/M/TR
PR79-BR-002-P2-01	N	Nitrate (as N)	50.0	240	240 J	-	ug/l	H1
PR79-BR-002-P2-01	N	Nitrite (as N)	50.0	13.0 J	13.0 J	-	ug/l	H1/TR
PR79-BR-002-P3-01	N	Nitrate (as N)	50.0	250	250 J	-	ug/l	H1
PR79-BR-002-P3-01	N	Nitrite (as N)	50.0	14.0 J	14.0 J	-	ug/l	H1/TR
PR79-BR-002-P4-01	N	Nitrate (as N)	50.0	200	200 J	-	ug/l	H1
PR79-BR-002-P4-01	N	Nitrite (as N)	50.0	30.0 J	30.0 J	-	ug/l	H1/TR
PR79-BR-002-P5-01	N	Nitrite (as N)	50.0	160	160 J	-	ug/l	H1
PR79-BR-002-P5-01	N	Nitrate (as N)	50.0	42.0 J	50.0 UJ		ug/l	L/H1

Test Method: VOCSIMC Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P2-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I

Table of All Qualified Results

Test Method: VOCSIMC	**Extraction Method: SW5030**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-002-P2-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P2-01	N	Benzene	0.0500	0.0270 J	0.0270 J	-	ug/l	I/TR
PR79-BR-002-P2-01	N	Chloroform	0.100	0.360	0.360 J	-	ug/l	I
PR79-BR-002-P2-01	N	Trichloroethene (TCE)	0.0500	120 E	120 J	-	ug/l	I
PR79-BR-002-P2-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-BR-002-P3-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P3-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P3-01	N	Benzene	0.0500	0.0430 J	0.0430 J	-	ug/l	I/TR
PR79-BR-002-P3-01	N	Chloroform	0.100	0.370	0.370 J	-	ug/l	I
PR79-BR-002-P3-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I
PR79-BR-002-P4-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P4-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ		ug/l	I
PR79-BR-002-P4-01	N	Benzene	0.0500	0.0290 J	0.0290 J	-	ug/l	I/TR
PR79-BR-002-P4-01	N	Chloroform	0.100	0.970	0.970 J	-	ug/l	I
PR79-BR-002-P4-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V2
PR79-BR-002-P1-01	N	Acenaphthylene	0.190	0.0930 UM	0.0930 UJ	0.0930 UJ	M/V1
PR79-BR-002-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 U	0.0930 UJ	G2
PR79-BR-002-P2-01	N	2-Methylnaphthalene	0.200	0.100 U	0.100 U	0.100 UJ	V2
PR79-BR-002-P2-01	N	Acenaphthylene	0.200	0.100 U	0.100 U	0.100 UJ	V1
PR79-BR-002-P2-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.100 U	0.100 U	0.100 UJ	G2
PR79-BR-002-P3-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/V2
PR79-BR-002-P3-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/V1
PR79-BR-002-P3-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/G2
PR79-BR-002-P4-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 UJ	I/V2
PR79-BR-002-P4-01	N	Acenaphthylene	0.190	0.0960 U	0.0960 UJ	0.0960 UJ	I/V1
PR79-BR-002-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 UJ	I/G2
PR79-BR-002-P5-01	N	2-Methylnaphthalene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V2
PR79-BR-002-P5-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1
PR79-BR-002-P5-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 U	0.0930 UJ	G2

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	Copper	25.0	1.50 J	1.50 J	1.50 J	TR/B3
PR79-BR-002-P1-01	N	Iron	100	8.60 J	8.60 J	80.0 U	B2
PR79-BR-002-P2-01	N	Copper	25.0	3.00 J	3.00 J	3.00 J	TR/B3
PR79-BR-002-P2-01	N	Iron	100	6.90 J	6.90 J	80.0 U	B2
PR79-BR-002-P3-01	N	Copper	25.0	2.40 J	2.40 J	2.40 J	TR/B3
PR79-BR-002-P4-01	N	Copper	25.0	2.40 J	2.40 J	2.40 J	TR/B3
PR79-BR-002-P4-01	N	Iron	100	5.50 J	5.50 J	80.0 U	B2
PR79-BR-002-P5-01	N	Aluminum	300	28.0 J	28.0 J	100 U	L
PR79-BR-002-P5-01	N	Copper	25.0	1.20 J	1.20 J	1.20 J	TR/B3

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	Copper	25.0	3.60 J	3.60 J	3.60 J	TR/B3
PR79-BR-002-P1-01	N	Iron	100	8.60 J	8.60 J	80.0 U	B2
PR79-BR-002-P2-01	N	Copper	25.0	6.20 J	6.20 J	6.20 J	TR/B3
PR79-BR-002-P2-01	N	Iron	100	13.0 J	13.0 J	80.0 U	B2
PR79-BR-002-P3-01	N	Copper	25.0	4.30 J	4.30 J	4.30 J	TR/B3
PR79-BR-002-P3-01	N	Iron	100	7.60 J	7.60 J	80.0 U	B2
PR79-BR-002-P4-01	N	Copper	25.0	2.60 J	2.60 J	2.60 J	TR/B3
PR79-BR-002-P4-01	N	Iron	100	32.0 J	32.0 J	80.0 U	B2
PR79-BR-002-P5-01	N	Copper	25.0	4.70 J	4.70 J	4.70 J	TR/B3

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	Lead	1.00	0.580 J	0.580 J	1.00 U	L
PR79-BR-002-P2-01	N	Lead	1.00	0.778 J	0.778 J	1.00 U	L
PR79-BR-002-P3-01	N	Lead	1.00	0.380 J	0.380 J	0.500 U	L
PR79-BR-002-P4-01	N	Lead	1.00	0.758 J	0.758 J	1.00 U	L
PR79-BR-002-P5-01	N	Lead	1.00	0.250 J	0.250 J	0.500 U	L

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	Mercury	0.200	0.0360 JA	0.0360 J	0.100	L
PR79-BR-002-P2-01	N	Mercury	0.200	0.0410 J	0.0410 J	0.100	L
PR79-BR-002-P3-01	N	Mercury	0.200	0.0380 J	0.0380 J	0.100	L
PR79-BR-002-P4-01	N	Mercury	0.200	0.0280 J	0.0280 J	0.100	L
PR79-BR-002-P5-01	N	Mercury	0.200	0.0380 J	0.0380 J	0.100	L

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V2
PR79-BR-002-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V2
PR79-BR-002-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V2
PR79-BR-002-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V2
PR79-BR-002-P5-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V2
TB-GW-20201218-01-01	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V2

Modified Qualifiers for test method SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-002-P1-01	N	Sulfate	1000	6600	6600 J	6600	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
B3	CCB - Neg
C	LCS Recovery
D	MS RPD
G2	Initial Calibration RSD/r^2/r
H1	Test Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG292300 (2.2 J mg/L) - no quals since samples >LOQ and >5XMB
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0371-1
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		TOC 0.16 J mg/L - see outlier report; results negated
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0371-1
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?		•		%RSD >15% for Indeno(1,2,3-cd)pyrene; all results manually qualified (J/UJ).
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		WG292998-8: 2-Methylnaphthalene (144%R), Acenaphthylene (78.9%R). Outliers and qualifications added manually; see outlier report.
Were CCVs run at the required frequency and within acceptance criteria?		•		%D criteria not met for 2-Methylnaphthalene in opening CCV. Outlier and qualifications added manually.
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report; %R <10% for DBP; assoc ND results for pentachlorophenol were rejected (X). Some results qualified due to low surrogate %R (TN0371-3, TN0371-4).
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			Note poor surrogate %Rs in MB; batch could not be reanalyzed within holding time. Issue was narrated and per client, samples were not reanalyzed.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		WG292411-2 %Rs below criteria, pentachlorophenol <10%R. See outlier report. ND Pentachlorophenol results rejected (X). Other results with low %R qualified J/UJ.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0371-1
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report. Result for pentachlorophenol in parent sample rejected (X) due to %R <10%. Other results qualified (J/UJ) due to %R and /or RPD outside criteria.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Was the MS/MSD RPD within project acceptance limits?		•		TN0371-1: RPD criteria not met for 1,4-Dioxane, Acenaphthylene, Anthracene, Pyrene, Benzo (a)anthracene, Benzo(a)pyrene. RPDs listed on outlier report do not match MS/MSD report in data package but correct compounds outside criteria are listed and correct qualifications were made by ADR (no quals for RPD since assoc results are ND). Benzo(g,h,i)Perylene RPD listed on outlier report but not marked outside criteria in lab report; RPD should have been flagged in lab data.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		Calibration and samples were not reanalyzed due to ICAL and ICV nonconformances.
Were any data recommended for rejection (exclusion) in the data validation process?	•			ND Pentachlorophenol results in all samples were rejected (X) due to poor surrogate recovery.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5, pH>2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were surrogate recoveries within project acceptance limits?			•	NA for MEE analysis
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292696-1 Methane (2.2 J ug/L) - see outlier report, results negated
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0371-1
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		Ca, Fe, Na detected in ICB/CCB; Cu neg drift. See outlier report - outliers and qualifications added manually by validator.
Did the ICSA have any non-target interferents above the MDL?	•			Non-spiked analyte results were <1/2LOQ per DoD QSM, no quals required.
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Dissolved results manually qualified based on prep blank contamination. See outlier report.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR002-P1-01 (TN0371-001) PR79-BR002-P1-01 (TN0371-008)
Were MS/MSD recoveries within project acceptance limits?		•		PR79-BR002-P1-01 (TN0371-001) criteria met PR79-BR002-P1-01 (TN0371-008) %R outside criteria in MS/MSD for Ca but no quals since sample conc >4X spiked amount. Note outlier report does not match MS %R Form 5A in data package; outliers revised manually for Ca, Na. Na %R above criteria in MSD; see outlier report.
Was the MS/MSD RPD within project acceptance limits?	•			MS/MSD RPD criteria met for TN0371-1, TN0371-8
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			TN0371-001, TN0371-008
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		ICB/CCB contamination - see outlier report.
Did the ICSA have any non-target interferents above the MDL?		•		
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL22IMW2: Pb 0.087 J ug/L. See outlier report. Qualification and outlier added manually for dissolved sample results.
Were target analytes in the field blank less than MDL?			•	FB not submited
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			MS/MSD on samples PR79-BR002-P1-01 (TN0371-001) and PR79-BR002-P1-01 (TN0371 -008)
Were MS/MSD recoveries within project acceptance limits?	•			%R criteria met for both spiked samples
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-BR002-P1-01 total and diss (TN0371-001 and TN0371-008)
Were QAPP specified laboratory PQLs achieved?	•			QAPP LOQs match what lab has reported. LOQ for Vanadium (10ug/L) does not meet action limit (8.60ug/L).
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were any data recommended for rejection (exclusion) in the data validation process?		•		no rejections

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			12/24/20
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		CCB Hg (0.028 J ug/L) - see outlier report. Outliers and qualifications added manually for dissolved results. Note contamination in PB higher than CCB, reason code L used for qualified results.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL24HGW2 Hg (0.029 J ug/L) - see outlier report for qualifications. Outlier and qualifications added manually for dissolved results.
Were target analytes in the field blank less than MDL?			•	no FB submitted with this data set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR002-P1-01 total and dissolved (TN0371 -001, TN0371-008)
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FDs not submitted
Were QAPP specified laboratory PQLs achieved?	•			Lab LOQs meet PQLs per WS#15
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data rejected

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5C, pH not recorded for some samples in VOCSIM prep log. pH<2 for all samples in VOC 8260 prep log. COC notes samples were preserved with HCl, no issues noted in case narrative or sample receipt. No action taken except to note this discrepancy.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			criteria met for VOCSIM and VOC 8260
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			8260 and VOCSIM criteria met
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			8260 and VOC SIM
Were all reported analytes for the ICV within the required criteria?	•			8260 and VOCSIM within criteria
Were CCVs run at the required frequency and within acceptance criteria?		•		See outlier report: 8260 WG292785-12 4-methyl-2-pentanone %D >20% assoc with all samples in this data set. VOC SIM WG292786-5 within criteria for closing CCV (<50%) for 124-TCBz, 123-TCBz; no qualifications.
Were Internal Standard retention times and area criteria within method requirements?	•			8260 and VOCSIM criteria met
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		Surr %Rs outside criteria for some VOCSIM analyses. See outlier report for qualifications. VOC8260 surr %R criteria met.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292786-2 VOC SIM Chloroform (0.024 J ug/L) - no quals required for assoc sample (TN0371-5, 12/31 analysis) since result >LOQ and >5XMB. WG292785-10 VOC 8260 Methylene Chloride (1.2 J ug/L) See outlier report for qualifications.
Were target analytes in the field blank less than MDL?		•		VOC 8260 TB-GW-20201218-01-01 methylene chloride result negated due to MB contamination. VOC SIM TB-GW-20201218-02-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			%R within criteria for VOCSIM and VOC8260
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR002-P1-01 MS/MSD
Were MS/MSD recoveries within project acceptance limits?	•			%R within criteria for 8260, VOC SIM
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Were QAPP specified laboratory PQLs achieved?		•		8260: t-butyl alcohol lab LOQ does not meet PQL in WS#15. VOCSIM LOQs meet PQLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		no data would be rejected

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.6, -0.5
Were holding times met?		•		HT criteria (48h) exceeded by 24h for nitrate and nitrite in all samples. See outlier report, results qualified.
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB WG292518, WG292661: Nitrate (0.036J mg/L), Sulfate (0.18 J mg/L). See outlier report; results negated or qualified for nitrate.
Were target analytes in the field blank less than MDL?			•	FB not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			LCS/LCSD for sulfate only
Was a MS/MSD pair prepared with each batch?	•			TN0371-1
Were MS/MSD recoveries within project acceptance limits?		•		%R above criteria for Nitrite. See outlier report. Since bias is high, pos result in parent sample was qualified (J). ADR notes sulfate %R outside criteria; however, based on lab report, MS/MSD %R and RPD criteria were met (94%/95%R, 1%RPD). Qualification for sulfate in parent sample manually removed by validator.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	FD not submitted
Were QAPP specified laboratory PQLs achieved?	•			no anomalies noted
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for TN0424

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Groundwater
SDG:	TN0424
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	A4500SF	A5310B	BNASIM	RSK175	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW8260C	SW9056A
PR79-BR-003-P1-01	TN0424-1	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-003-P1-01	TN0424-12	Water	Field Sample/N							X		X		X		
PR79-BR-003-P2-01	TN0424-13	Water	Field Sample/N							X		X		X		
PR79-BR-003-P2-01	TN0424-2	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-003-P3-01	TN0424-14	Water	Field Sample/N							X		X		X		
PR79-BR-003-P3-01	TN0424-3	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-003-P4-01	TN0424-15	Water	Field Sample/N							X		X		X		
PR79-BR-003-P4-01	TN0424-4	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-005-P1-01	TN0424-16	Water	Field Sample/N							X		X		X		
PR79-BR-005-P1-01	TN0424-5	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-005-P2-01	TN0424-17	Water	Field Sample/N							X		X		X		
PR79-BR-005-P2-01	TN0424-6	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-005-P3-01	TN0424-18	Water	Field Sample/N							X		X		X		
PR79-BR-005-P3-01	TN0424-7	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-BR-005-P4-01	TN0424-19	Water	Field Sample/N							X		X		X		
PR79-BR-005-P4-01	TN0424-8	Water	Field Sample/N	X	X	X	X	X	X		X		X		X	X
PR79-GW-FD05-01	TN0424-020	Water	Field Duplicate/FD							X		X		X		
PR79-GW-FD05-01	TN0424-9	Water	Field Duplicate/FD	X	X	X	X	X	X		X		X		X	X
TB-GW-20201221-01-01	TN0424-10	Water	Trip Blank/TB												X	
TB-GW-20201221-02-01	TN0424-11	Water	Trip Blank/TB													

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-BR-003-P1-01	TN0424-1	Water	Field Sample/N	X
PR79-BR-003-P1-01	TN0424-12	Water	Field Sample/N	
PR79-BR-003-P2-01	TN0424-13	Water	Field Sample/N	
PR79-BR-003-P2-01	TN0424-2	Water	Field Sample/N	X
PR79-BR-003-P3-01	TN0424-14	Water	Field Sample/N	
PR79-BR-003-P3-01	TN0424-3	Water	Field Sample/N	X
PR79-BR-003-P4-01	TN0424-15	Water	Field Sample/N	
PR79-BR-003-P4-01	TN0424-4	Water	Field Sample/N	X
PR79-BR-005-P1-01	TN0424-16	Water	Field Sample/N	
PR79-BR-005-P1-01	TN0424-5	Water	Field Sample/N	X
PR79-BR-005-P2-01	TN0424-17	Water	Field Sample/N	
PR79-BR-005-P2-01	TN0424-6	Water	Field Sample/N	X
PR79-BR-005-P3-01	TN0424-18	Water	Field Sample/N	
PR79-BR-005-P3-01	TN0424-7	Water	Field Sample/N	X
PR79-BR-005-P4-01	TN0424-19	Water	Field Sample/N	
PR79-BR-005-P4-01	TN0424-8	Water	Field Sample/N	X
PR79-GW-FD05-01	TN0424-020	Water	Field Duplicate/FD	
PR79-GW-FD05-01	TN0424-9	Water	Field Duplicate/FD	X
TB-GW-20201221-01-01	TN0424-10	Water	Trip Blank/TB	
TB-GW-20201221-02-01	TN0424-11	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) TN0424. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 173 results (15.80%) out of the 1095 results (sample and field QC samples) reported are qualified based on review and 9 results (0.82%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Based on comments from the Corps, issues noted in the lab's case narrative that are not part of a Stage 2A validation were addressed in the review checklist and qualifiers were added.

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
A4500SF	No additional comments; see Checklist for detail.
A5310B	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
VOCSIMC	No additional comments; see Checklist for detail.

March 31, 2021

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292423-1 (LB)/ WG292423-1	Alkalinity, Total (as CaCO3)	2300	< 230	< 5000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (MS)/ WG292423-3	Alkalinity, Total (as CaCO3)	122.5	80 - 120	30 - 120	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Alkalinity, Total (as CaCO3)	5000	23000	23000 J	+	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A5310B, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-9	Total Organic Carbon	1.100	< 1	< 1	mg/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for A5310B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Total Organic Carbon	1.00	6.00	6.00 J		mg/l	D3
PR79-GW-FD05-01	FD	Total Organic Carbon	1.00	4.90	4.90 J		mg/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A5310B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292683-1 (LB)/ WG292683-1	Total Organic Carbon	0.1500	< 0.1	< 1	mg/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG293072-2 (CV)/ TN0424-1	2-Methylnaphthalene	131.3	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	2-Methylnaphthalene	0.190	0.0930 UM	0.0930 UJ		ug/l	I/V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG293912-3 (CV)	1,4-Dioxane (p-Dioxane)	54.68	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P2-01	N	1,4-Dioxane (p-Dioxane)	0.500	18.0	18.0 J	-	ug/l	V2
PR79-BR-005-P4-01	N	1,4-Dioxane (p-Dioxane)	0.990	17.0	17.0 J	-	ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-9	1,4-Dioxane (p-Dioxane)	114.8	< 30	< 30	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	1,4-Dioxane (p-Dioxane)	0.240	8.50	8.50 J		ug/l	D3
PR79-GW-FD05-01	FD	1,4-Dioxane (p-Dioxane)	0.240	2.30	2.30 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration RSD/r^2/r

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
Inst N 01/06/21/ TN0424-1	Indeno(1,2,3-c,d)pyrene	17.56	< 15	< 15	rsd	J/UJ	G2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RSD/r^2/r for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/G2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292998-8 (IV)/ TN0424-1	2-Methylnaphthalene	143.6	80 - 120	50 - 150	percent	J/UJ	V1	
WG292998-8 (IV)/ TN0424-1	Acenaphthylene	78.88	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	2-Methylnaphthalene	0.190	0.0930 UM	0.0930 UJ		ug/l	I/V1/V2
PR79-BR-003-P1-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292411-2 (BS)/ WG292411-2	Pentachlorophenol	0.000	36 - 141	10 - 141	percent	J/X	C	
WG292411-2 (BS)/ WG292411-2	Benzo(a)pyrene	20.45	53 - 120	10 - 120	percent	J/UJ	C	
WG292411-2 (BS)/ WG292411-2	Anthracene	43.00	53 - 119	10 - 119	percent	J/UJ	C	
WG292411-2 (BS)/ WG292411-2	Benzo (a)anthracene	48.65	59 - 120	10 - 120	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 R		ug/l	C/M/I
PR79-BR-003-P2-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(a)anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-003-P3-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-003-P3-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-003-P3-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-003-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 R		ug/l	C/I
PR79-BR-003-P4-01	N	Anthracene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(a)anthracene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(a)pyrene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C/I
PR79-BR-005-P1-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-BR-005-P1-01	N	Benzo(a)anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-BR-005-P1-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-BR-005-P1-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C/I
PR79-BR-005-P2-01	N	Anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C
PR79-BR-005-P2-01	N	Benzo(a)anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C
PR79-BR-005-P2-01	N	Benzo(a)pyrene	0.200	0.0990 UL	0.0990 UJ		ug/l	C
PR79-BR-005-P2-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-005-P3-01	N	Anthracene	0.210	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-005-P3-01	N	Benzo(a)anthracene	0.210	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-005-P3-01	N	Benzo(a)pyrene	0.210	0.100 UL	0.100 UJ		ug/l	C

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P3-01	N	Pentachlorophenol	1.00	0.520 UL	0.520 R		ug/l	C/I
PR79-BR-005-P4-01	N	Anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(a)anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(a)pyrene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 R		ug/l	C/I
PR79-GW-FD05-01	FD	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-GW-FD05-01	FD	Benzo(a)anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-GW-FD05-01	FD	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-GW-FD05-01	FD	Pentachlorophenol	0.970	0.480 UL	0.480 R		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (MS)/ WG292411-5	1,4-Dioxane (p-Dioxane)	-84.02	10 - 93	10 - 93	percent	J/X	M	
PR79-BR-003-P1-01 (MS)/ WG292411-5	Pentachlorophenol	12.37	36 - 141	10 - 141	percent	J/UJ	M	
PR79-BR-003-P1-01 (MS)/ WG292411-5	Anthracene	31.96	53 - 119	10 - 119	percent	J/UJ	M	
PR79-BR-003-P1-01 (MS)/ WG292411-5	Benzo(a)pyrene	31.96	53 - 120	10 - 120	percent	J/UJ	M	
PR79-BR-003-P1-01 (MS)/ WG292411-5	Pyrene	50.52	53 - 121	10 - 121	percent	J/UJ	M	
PR79-BR-003-P1-01 (MS)/ WG292411-5	Benzo (a)anthracene	51.55	59 - 120	10 - 120	percent	J/UJ	M	
PR79-BR-003-P1-01 (SD)/ WG292411-6	1,4-Dioxane (p-Dioxane)	-61.86	10 - 93	10 - 93	percent	J/X	M	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Pentachlorophenol	12.37	36 - 141	10 - 141	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 R		ug/l	C/M/I
PR79-BR-003-P1-01	N	Pyrene	0.190	0.0930 UM	0.0930 UJ		ug/l	M/I
PR79-BR-003-P1-01	N	1,4-Dioxane (p-Dioxane)	0.230	2.60 MM	2.60 J		ug/l	M/D/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (SD)/ WG292411-6	1,4-Dioxane (p-Dioxane)	0.4300	< 0.24	< 0.24	ug/l	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Acenaphthylene	0.4600	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Anthracene	0.5800	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Benzo(a)pyrene	0.5800	< 0.19	< 0.19	ug/l	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Acenaphthene	22.22	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Fluorene	28.57	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Benzo (k)fluoranthene	30.30	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Benzo (g,h,i)perylene	30.77	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Dibenz (a,h)anthracene	30.77	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Indeno(1,2,3-c,d)pyrene	34.48	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Benzo (b)fluoranthene	37.04	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Phenanthrene	37.04	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Chrysene	37.50	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Fluoranthene	40.00	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Benzo (a)anthracene	46.15	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292411-6	Pyrene	53.73	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	1,4-Dioxane (p-Dioxane)	0.230	2.60 MM	2.60 J		ug/l	M/D/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (N)/ TN0424-1	2,4-Dibromophenol	1.950	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-003-P1-01 (N)/ TN0424-1	Pyrene-d10	41.80	53 - 166	10 - 166	percent	J/UJ	I	
PR79-BR-003-P1-01 (N)/ TN0424-1	2-Methylnaphthalene -d10	95.10	43 - 92	10 - 92	percent	J/None	I	
PR79-BR-003-P2-01 (N)/ TN0424-2	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-003-P2-01 (N)/ TN0424-2	2-Methylnaphthalene -d10	38.50	43 - 92	10 - 92	percent	J/UJ	I	
PR79-BR-003-P2-01 (N)/ TN0424-2	Pyrene-d10	47.20	53 - 166	10 - 166	percent	J/UJ	I	
PR79-BR-003-P3-01 (N)/ TN0424-3	2,4-Dibromophenol	0.8640	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-003-P4-01 (N)/ TN0424-4	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-003-P4-01 (N)/ TN0424-4	Pyrene-d10	38.80	53 - 166	10 - 166	percent	J/UJ	I	
PR79-BR-003-P4-01 (N)/ TN0424-4	2-Methylnaphthalene -d10	40.10	43 - 92	10 - 92	percent	J/UJ	I	
PR79-BR-005-P1-01 (N)/ TN0424-5	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-005-P2-01 (N)/ TN0424-6	2,4-Dibromophenol	0.4000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-005-P3-01 (N)/ TN0424-7	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-005-P4-01 (N)/ TN0424-8	2,4-Dibromophenol	0.1420	10 - 130	10 - 130	percent	J/X	I	
PR79-BR-005-P4-01 (N)/ TN0424-8	2-Methylnaphthalene -d10	41.30	43 - 92	10 - 92	percent	J/UJ	I	
PR79-GW-FD05-01 (FD)/ TN0424-9	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	1,4-Dioxane (p-Dioxane)	0.230	2.60 MM	2.60 J		ug/l	M/D/I
PR79-BR-003-P1-01	N	2-Methylnaphthalene	0.190	0.0930 UM	0.0930 UJ		ug/l	I/V1/V2
PR79-BR-003-P1-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1
PR79-BR-003-P1-01	N	Anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Chrysene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Fluorene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/G2
PR79-BR-003-P1-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 R		ug/l	C/M/I
PR79-BR-003-P1-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Pyrene	0.190	0.0930 UM	0.0930 UJ		ug/l	M/I
PR79-BR-003-P2-01	N	1,4-Dioxane (p-Dioxane)	0.250	12.0	12.0 J	-	ug/l	I
PR79-BR-003-P2-01	N	2-Methylnaphthalene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Acenaphthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Acenaphthylene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(a)anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(b)fluoranthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Benzo(g,h,i)perylene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Benzo(k)fluoranthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Chrysene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Dibenz(a,h)anthracene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Fluoranthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Fluorene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Naphthalene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-003-P2-01	N	Phenanthrene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Pyrene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 R		ug/l	C/I
PR79-BR-003-P4-01	N	1,4-Dioxane (p-Dioxane)	0.240	4.70	4.70 J	-	ug/l	I
PR79-BR-003-P4-01	N	2-Methylnaphthalene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Acenaphthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Acenaphthylene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Anthracene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(a)anthracene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(a)pyrene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(b)fluoranthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Benzo(g,h,i)perylene	0.190	0.0940 U	0.0940 UJ		ug/l	I

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P4-01	N	Benzo(k)fluoranthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Chrysene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Fluoranthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Fluorene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Naphthalene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C/I
PR79-BR-003-P4-01	N	Phenanthrene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Pyrene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-005-P1-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C/I
PR79-BR-005-P2-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-005-P3-01	N	Pentachlorophenol	1.00	0.520 UL	0.520 R		ug/l	C/I
PR79-BR-005-P4-01	N	2-Methylnaphthalene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Acenaphthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Acenaphthylene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(a)anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(a)pyrene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(b)fluoranthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Benzo(g,h,i)perylene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Benzo(k)fluoranthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Chrysene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Dibenz(a,h)anthracene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Fluoranthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Fluorene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Naphthalene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-005-P4-01	N	Phenanthrene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Pyrene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-GW-FD05-01	FD	Pentachlorophenol	0.970	0.480 UL	0.480 R		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-020	Zinc	31.50	< 20	< 20	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Zinc	20.0	26.4	26.4		ug/l	D3
PR79-GW-FD05-01	FD	Zinc	20.0	57.9	57.9		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL28ICW1 (LB)	Zinc	0.7800	< 0.72	< 20	ug/l	None/None	L	
PBWNL28ICW1 (LB)	Magnesium	15.00	< 7.8	< 100	ug/l	None/None	L	
PBWNL28ICW1 (LB)	Aluminum	45.00	< 15	< 300	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Zinc	20.0	6.00 J	10.0 U		ug/l	L
PR79-BR-003-P2-01	N	Aluminum	300	18.0 J	100 U		ug/l	L
PR79-BR-003-P2-01	N	Zinc	20.0	15.0 J	20.0 U		ug/l	L
PR79-BR-003-P3-01	N	Zinc	20.0	9.19 J	10.0 U		ug/l	L
PR79-BR-003-P4-01	N	Zinc	20.0	1.80 J	10.0 U		ug/l	L
PR79-BR-005-P1-01	N	Aluminum	300	22.0 J	100 U		ug/l	L
PR79-BR-005-P3-01	N	Aluminum	300	19.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Aluminum	300	18.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Zinc	20.0	4.20 J	10.0 U		ug/l	L
PR79-GW-FD05-01	FD	Aluminum	300	30.0 J	100 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (SD)/ TN0424-012P	Vanadium	113.5	90 - 111	30 - 125	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ TN0424-012P	Chromium	115.5	90 - 113	30 - 125	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ TN0424-012P	Copper	118.1	86 - 114	30 - 125	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ TN0424-012P	Calcium	119.9	87 - 113	30 - 125	percent	J/None	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Copper	25.0	4.80 JN	4.80 J	+	ug/l	M/TR
PR79-BR-003-P1-01	N	Vanadium	10.0	0.370 JN	0.370 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-9	Zinc	67.20	< 20	< 20	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Zinc	20.0	74.0	74.0 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNL28ICW1 (LB)/ PBWNL28ICW1	Zinc	0.7800	< 0.72	< 20	ug/l	U/None	L	
PBWNL28ICW1 (LB)/ PBWNL28ICW1	Magnesium	15.00	< 7.8	< 100	ug/l	U/None	L	
PBWNL28ICW1 (LB)/ PBWNL28ICW1	Aluminum	45.00	< 15	< 300	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P2-01	N	Aluminum	300	16.0 J	100 U		ug/l	L
PR79-BR-003-P3-01	N	Zinc	20.0	17.1 J	20.0 U		ug/l	L
PR79-BR-003-P4-01	N	Aluminum	300	18.0 J	100 U		ug/l	L
PR79-BR-003-P4-01	N	Zinc	20.0	3.20 J	10.0 U		ug/l	L
PR79-BR-005-P1-01	N	Aluminum	300	40.0 J	100 U		ug/l	L
PR79-BR-005-P2-01	N	Aluminum	300	16.0 J	100 U		ug/l	L
PR79-BR-005-P3-01	N	Aluminum	300	20.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Aluminum	300	21.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Zinc	20.0	3.20 J	10.0 U		ug/l	L
PR79-GW-FD05-01	FD	Aluminum	300	72.0 J	100 U		ug/l	L
PR79-GW-FD05-01	FD	Zinc	20.0	6.80 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (MS)/ TN0424-001S	Vanadium	112.3	90 - 111	30 - 125	percent	J/None	M	
PR79-BR-003-P1-01 (MS)/ TN0424-001S	Chromium	114.0	90 - 113	30 - 125	percent	J/None	M	
PR79-BR-003-P1-01 (MS)/ TN0424-001S	Copper	116.0	86 - 114	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Copper	25.0	3.90 JN	3.90 J	+	ug/l	M/TR
PR79-BR-003-P1-01	N	Vanadium	10.0	0.350 JN	0.350 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-020	Lead	36.56	< 30	< 30	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Lead	1.00	11.4	11.4 J		ug/l	D3
PR79-GW-FD05-01	FD	Lead	1.00	16.5	16.5 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-9	Lead	92.19	< 30	< 30	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Lead	1.00	26.1	26.1 J		ug/l	D3
PR79-GW-FD05-01	FD	Lead	1.00	9.63	9.63 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292583-4 (CV)	Chloroethane	123.2	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P4-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-BR-005-P3-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-BR-005-P4-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292913-4 (CV)/ TN0424-9	tert-Butyl alcohol	75.57	80 - 120	50 - 150	percent	J/UJ	V2	
WG292913-4 (CV)/ TN0424-9	4-Methyl-2-pentanone (MIBK)	79.44	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD05-01	FD	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1/V2
PR79-GW-FD05-01	FD	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P1-01 (N)/ TN0424-9	Acetone	33.60	< 5	< 5	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Acetone	5.00	36.0	36.0 J	-	ug/l	D3/V1
PR79-GW-FD05-01	FD	Acetone	5.00	2.40 J	2.40 J	-	ug/l	D3/TR/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292843-8 (IV)	Chloroethane	138.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG292843-8 (IV)	4-Methyl-2-pentanone (MIBK)	76.49	80 - 120	50 - 150	percent	J/UJ	V1	
WG292843-8 (IV)	Acetone	78.44	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P1-01	N	Acetone	5.00	51.0 M	51.0 J	-	ug/l	M/D/V1
PR79-BR-003-P1-01	N	Chloroethane	2.00	1.00 UM	1.00 UJ		ug/l	V1
PR79-BR-003-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P2-01	N	Acetone	5.00	42.0	42.0 J	-	ug/l	V1
PR79-BR-003-P2-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-003-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P3-01	N	Acetone	5.00	16.0	16.0 J	-	ug/l	V1
PR79-BR-003-P3-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-003-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P4-01	N	Acetone	5.00	4.60 J	4.60 J	-	ug/l	TR/V1
PR79-BR-003-P4-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-BR-005-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P1-01	N	Acetone	5.00	36.0	36.0 J	-	ug/l	D3/V1
PR79-BR-005-P1-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-005-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P2-01	N	Acetone	5.00	34.0	34.0 J		ug/l	I/V1
PR79-BR-005-P2-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-005-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P3-01	N	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P3-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-BR-005-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P4-01	N	Acetone	5.00	20.0	20.0 J	-	ug/l	V1
PR79-BR-005-P4-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-GW-FD05-01	FD	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1/V2
PR79-GW-FD05-01	FD	Acetone	5.00	2.40 J	2.40 J	-	ug/l	D3/TR/V1

Qualified Results associated with the Initial Calibration Verification for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-GW-FD05-01	FD	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
TB-GW-20201221-01-01	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
TB-GW-20201221-01-01	TB	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V1
TB-GW-20201221-01-01	TB	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292843-10 (LB)/ WG292843-10	Methylene chloride	1.700	< 1.1	< 5	ug/l	U/None	L	
WG292913-2 (LB)/ WG292913-2	Methylene chloride	1.600	< 1.1	< 5	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
TB-GW-20201221-01-01	TB	Methylene chloride	5.00	1.90 J	2.50 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (MS)/ WG292843-13	Acetone	-21.40	39 - 160	10 - 160	percent	J/X	M	
PR79-BR-003-P1-01 (MS)/ WG292843-13	Chloroethane	159.0	60 - 138	10 - 138	percent	J/None	M	
PR79-BR-003-P1-01 (MS)/ WG292843-13	tert-Butyl alcohol	67.20	68 - 129	10 - 129	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Acetone	5.00	51.0 M	51.0 J	-	ug/l	M/D/V1
PR79-BR-003-P1-01	N	tert-Butyl alcohol	10.0	5.00 UM	5.00 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (SD)/ WG292843-14	Chloroethane	20.07	< 20	< 20	rpd	J/None	D	
PR79-BR-003-P1-01 (SD)/ WG292843-14	Acetone	69.68	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Acetone	5.00	51.0 M	51.0 J	-	ug/l	M/D/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P2-01 (N)/ TN0424-6	1,2-Dichloroethane-d4	119.0	81 - 118	10 - 118	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P2-01	N	2-Butanone (MEK)	5.00	4.50 J	4.50 J	+	ug/l	I/TR
PR79-BR-005-P2-01	N	Acetone	5.00	34.0	34.0 J		ug/l	I/V1
PR79-BR-005-P2-01	N	Chloroform	1.00	3.20	3.20 J	+	ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-GW-FD05-01 (FD)/ TN0424-9		14.00	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-GW-20201221-01-01 (TB)/ TN0424-10	Methylene chloride	1.900	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9056A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292618-1 (LB)/ WG292618-1	Sulfate	140.0	< 64	< 1000	ug/l	U/None	L	
WG292618-1 (LB)/ WG292618-1	Nitrate (as N)	25.00	< 17	< 50	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P3-01	N	Nitrate (as N)	50.0	36.0 J	50.0 U		ug/l	L
PR79-BR-003-P4-01	N	Nitrate (as N)	50.0	82.0	82.0 J	+	ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (MS)/ WG292618-3	Nitrite (as N)	121.8	90 - 110	30 - 110	percent	J/None	M	
PR79-BR-003-P1-01 (MS)/ WG292618-3	Sulfate	80.00	90 - 110	30 - 110	percent	J/UJ	M	
PR79-BR-003-P1-01 (SD)/ WG292618-4	Nitrate (as N)	112.4	90 - 110	30 - 110	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ WG292618-4	Nitrite (as N)	121.8	90 - 110	30 - 110	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Nitrite (as N)	50.0	11.0 J	11.0 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9056A, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-005-P2-01 (N)/ TN0424-6		173.6	< 48	< 96	hours	J/X	H1	Test Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG292786-2 (LB)/ WG292786-2	Chloroform	0.02400	< 0.0061	< 0.1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-BR-003-P1-01 (MS)/ WG292786-6	1,2,3-Trichlorobenzene	134.0	70 - 130	10 - 130	percent	J/None	M	
PR79-BR-003-P1-01 (MS)/ WG292786-6	1,2,4-Trichlorobenzene	140.0	70 - 130	10 - 130	percent	J/None	M	
PR79-BR-003-P1-01 (MS)/ WG292786-6	Chloroform	152.0	70 - 130	10 - 130	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ WG292786-7	1,2,3-Trichlorobenzene	136.0	70 - 130	10 - 130	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ WG292786-7	1,2,4-Trichlorobenzene	138.0	70 - 130	10 - 130	percent	J/None	M	
PR79-BR-003-P1-01 (SD)/ WG292786-7	Chloroform	152.0	70 - 130	10 - 130	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Chloroform	0.100	0.440 MM	0.440 J	+	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: A2320B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Alkalinity, Total (as CaCO3)	5000	23000	23000 J	+	ug/l	M

Test Method: A5310B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Total Organic Carbon	1.00	6.00	6.00 J		mg/l	D3
PR79-GW-FD05-01	FD	Total Organic Carbon	1.00	4.90	4.90 J		mg/l	D3

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	2-Methylnaphthalene	0.190	0.0930 UM	0.0930 UJ		ug/l	I/V1/V2
PR79-BR-003-P1-01	N	Acenaphthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ		ug/l	I/V1
PR79-BR-003-P1-01	N	Anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)anthracene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(a)pyrene	0.190	0.0930 ULM	0.0930 UJ		ug/l	C/M/I
PR79-BR-003-P1-01	N	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Chrysene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Fluoranthene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Fluorene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ		ug/l	I/G2
PR79-BR-003-P1-01	N	Naphthalene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Phenanthrene	0.190	0.0930 U	0.0930 UJ		ug/l	I
PR79-BR-003-P1-01	N	Pyrene	0.190	0.0930 UM	0.0930 UJ		ug/l	M/I
PR79-BR-003-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 R		ug/l	C/M/I
PR79-BR-003-P1-01	N	1,4-Dioxane (p-Dioxane)	0.230	2.60 MM	2.60 J		ug/l	M/D/I
PR79-BR-003-P2-01	N	1,4-Dioxane (p-Dioxane)	0.250	12.0	12.0 J	-	ug/l	I
PR79-BR-003-P2-01	N	2-Methylnaphthalene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Acenaphthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Acenaphthylene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(a)anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C/I
PR79-BR-003-P2-01	N	Benzo(b)fluoranthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Benzo(g,h,i)perylene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Benzo(k)fluoranthene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Chrysene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Dibenz(a,h)anthracene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Fluoranthene	0.200	0.100 U	0.100 UJ		ug/l	I

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P2-01	N	Fluorene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Naphthalene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-003-P2-01	N	Phenanthrene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P2-01	N	Pyrene	0.200	0.100 U	0.100 UJ		ug/l	I
PR79-BR-003-P3-01	N	Anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-003-P3-01	N	Benzo(a)anthracene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-003-P3-01	N	Benzo(a)pyrene	0.190	0.0930 UL	0.0930 UJ		ug/l	C
PR79-BR-003-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 R		ug/l	C/I
PR79-BR-003-P4-01	N	1,4-Dioxane (p-Dioxane)	0.240	4.70	4.70 J	-	ug/l	I
PR79-BR-003-P4-01	N	2-Methylnaphthalene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Acenaphthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Acenaphthylene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Anthracene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(a)anthracene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(a)pyrene	0.190	0.0940 UL	0.0940 UJ		ug/l	C/I
PR79-BR-003-P4-01	N	Benzo(b)fluoranthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Benzo(g,h,i)perylene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Benzo(k)fluoranthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Chrysene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Fluoranthene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Fluorene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Naphthalene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C/I
PR79-BR-003-P4-01	N	Phenanthrene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-003-P4-01	N	Pyrene	0.190	0.0940 U	0.0940 UJ		ug/l	I
PR79-BR-005-P1-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C/I
PR79-BR-005-P1-01	N	1,4-Dioxane (p-Dioxane)	0.240	8.50	8.50 J		ug/l	D3
PR79-BR-005-P1-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-BR-005-P1-01	N	Benzo(a)anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-BR-005-P1-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-BR-005-P2-01	N	1,4-Dioxane (p-Dioxane)	0.500	18.0	18.0 J	-	ug/l	V2
PR79-BR-005-P2-01	N	Anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C
PR79-BR-005-P2-01	N	Benzo(a)anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C
PR79-BR-005-P2-01	N	Benzo(a)pyrene	0.200	0.0990 UL	0.0990 UJ		ug/l	C
PR79-BR-005-P2-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 R		ug/l	C/I
PR79-BR-005-P3-01	N	Pentachlorophenol	1.00	0.520 UL	0.520 R		ug/l	C/I
PR79-BR-005-P3-01	N	Anthracene	0.210	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-005-P3-01	N	Benzo(a)anthracene	0.210	0.100 UL	0.100 UJ		ug/l	C

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P3-01	N	Benzo(a)pyrene	0.210	0.100 UL	0.100 UJ		ug/l	C
PR79-BR-005-P4-01	N	1,4-Dioxane (p-Dioxane)	0.990	17.0	17.0 J	-	ug/l	V2
PR79-BR-005-P4-01	N	2-Methylnaphthalene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Acenaphthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Acenaphthylene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(a)anthracene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(a)pyrene	0.200	0.0990 UL	0.0990 UJ		ug/l	C/I
PR79-BR-005-P4-01	N	Benzo(b)fluoranthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Benzo(g,h,i)perylene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Benzo(k)fluoranthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Chrysene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Dibenz(a,h)anthracene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Fluoranthene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Fluorene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Naphthalene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Phenanthrene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Pyrene	0.200	0.0990 U	0.0990 UJ		ug/l	I
PR79-BR-005-P4-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 R		ug/l	C/I
PR79-GW-FD05-01	FD	1,4-Dioxane (p-Dioxane)	0.240	2.30	2.30 J		ug/l	D3
PR79-GW-FD05-01	FD	Pentachlorophenol	0.970	0.480 UL	0.480 R		ug/l	C/I
PR79-GW-FD05-01	FD	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-GW-FD05-01	FD	Benzo(a)anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-GW-FD05-01	FD	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Zinc	20.0	6.00 J	10.0 U		ug/l	L
PR79-BR-003-P1-01	N	Copper	25.0	4.80 JN	4.80 J	+	ug/l	M/TR
PR79-BR-003-P1-01	N	Vanadium	10.0	0.370 JN	0.370 J	+	ug/l	M/TR
PR79-BR-003-P2-01	N	Aluminum	300	18.0 J	100 U		ug/l	L
PR79-BR-003-P2-01	N	Zinc	20.0	15.0 J	20.0 U		ug/l	L
PR79-BR-003-P3-01	N	Zinc	20.0	9.19 J	10.0 U		ug/l	L
PR79-BR-003-P4-01	N	Zinc	20.0	1.80 J	10.0 U		ug/l	L
PR79-BR-005-P1-01	N	Aluminum	300	22.0 J	100 U		ug/l	L
PR79-BR-005-P1-01	N	Zinc	20.0	26.4	26.4		ug/l	D3
PR79-BR-005-P3-01	N	Aluminum	300	19.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Aluminum	300	18.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Zinc	20.0	4.20 J	10.0 U		ug/l	L
PR79-GW-FD05-01	FD	Aluminum	300	30.0 J	100 U		ug/l	L
PR79-GW-FD05-01	FD	Zinc	20.0	57.9	57.9		ug/l	D3

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Copper	25.0	3.90 JN	3.90 J	+	ug/l	M/TR
PR79-BR-003-P1-01	N	Vanadium	10.0	0.350 JN	0.350 J	+	ug/l	M/TR
PR79-BR-003-P2-01	N	Aluminum	300	16.0 J	100 U		ug/l	L
PR79-BR-003-P3-01	N	Zinc	20.0	17.1 J	20.0 U		ug/l	L
PR79-BR-003-P4-01	N	Aluminum	300	18.0 J	100 U		ug/l	L
PR79-BR-003-P4-01	N	Zinc	20.0	3.20 J	10.0 U		ug/l	L
PR79-BR-005-P1-01	N	Aluminum	300	40.0 J	100 U		ug/l	L
PR79-BR-005-P1-01	N	Zinc	20.0	74.0	74.0 J		ug/l	D3
PR79-BR-005-P2-01	N	Aluminum	300	16.0 J	100 U		ug/l	L
PR79-BR-005-P3-01	N	Aluminum	300	20.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Aluminum	300	21.0 J	100 U		ug/l	L
PR79-BR-005-P4-01	N	Zinc	20.0	3.20 J	10.0 U		ug/l	L
PR79-GW-FD05-01	FD	Aluminum	300	72.0 J	100 U		ug/l	L
PR79-GW-FD05-01	FD	Zinc	20.0	6.80 J	10.0 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Lead	1.00	11.4	11.4 J		ug/l	D3
PR79-GW-FD05-01	FD	Lead	1.00	16.5	16.5 J		ug/l	D3

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Lead	1.00	26.1	26.1 J		ug/l	D3
PR79-GW-FD05-01	FD	Lead	1.00	9.63	9.63 J		ug/l	D3

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P1-01	N	Chloroethane	2.00	1.00 UM	1.00 UJ		ug/l	V1
PR79-BR-003-P1-01	N	Acetone	5.00	51.0 M	51.0 J	-	ug/l	M/D/V1
PR79-BR-003-P1-01	N	tert-Butyl alcohol	10.0	5.00 UM	5.00 UJ		ug/l	M
PR79-BR-003-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P2-01	N	Acetone	5.00	42.0	42.0 J	-	ug/l	V1
PR79-BR-003-P2-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-003-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P3-01	N	Acetone	5.00	16.0	16.0 J	-	ug/l	V1
PR79-BR-003-P3-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-003-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-003-P4-01	N	Acetone	5.00	4.60 J	4.60 J	-	ug/l	TR/V1
PR79-BR-003-P4-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-BR-005-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-005-P1-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-005-P1-01	N	Acetone	5.00	36.0	36.0 J	-	ug/l	D3/V1
PR79-BR-005-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P2-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-BR-005-P2-01	N	2-Butanone (MEK)	5.00	4.50 J	4.50 J	+	ug/l	I/TR
PR79-BR-005-P2-01	N	Acetone	5.00	34.0	34.0 J		ug/l	I/V1
PR79-BR-005-P2-01	N	Chloroform	1.00	3.20	3.20 J	+	ug/l	I
PR79-BR-005-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P3-01	N	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P3-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-BR-005-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
PR79-BR-005-P4-01	N	Acetone	5.00	20.0	20.0 J	-	ug/l	V1
PR79-BR-005-P4-01	N	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1/V2
PR79-GW-FD05-01	FD	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1/V2
PR79-GW-FD05-01	FD	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
PR79-GW-FD05-01	FD	Acetone	5.00	2.40 J	2.40 J	-	ug/l	D3/TR/V1
PR79-GW-FD05-01	FD	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ		ug/l	V2
TB-GW-20201221-01-01	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ		ug/l	V1
TB-GW-20201221-01-01	TB	Acetone	5.00	2.50 U	2.50 UJ		ug/l	V1
TB-GW-20201221-01-01	TB	Chloroethane	2.00	1.00 U	1.00 UJ		ug/l	V1
TB-GW-20201221-01-01	TB	Methylene chloride	5.00	1.90 J	2.50 U		ug/l	L

Test Method: SW9056A Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Nitrite (as N)	50.0	11.0 J	11.0 J	+	ug/l	M/TR
PR79-BR-003-P3-01	N	Nitrate (as N)	50.0	36.0 J	50.0 U		ug/l	L
PR79-BR-003-P4-01	N	Nitrate (as N)	50.0	82.0	82.0 J	+	ug/l	L

Test Method: VOCSIMC Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-BR-003-P1-01	N	Chloroform	0.100	0.440 MM	0.440 J	+	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-003-P1-01	N	2-Methylnaphthalene	0.190	0.0930 UM	0.0930 UJ	0.0930 UJ	I/V1/V2
PR79-BR-003-P1-01	N	Acenaphthylene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/V1
PR79-BR-003-P1-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ	0.0930 UJ	I/G2
PR79-BR-003-P1-01	N	Pentachlorophenol	0.930	0.470 ULMM	0.470 X	0.470 R	C/M/I
PR79-BR-003-P2-01	N	Pentachlorophenol	1.00	0.500 UL	0.500 X	0.500 R	C/I
PR79-BR-003-P3-01	N	Pentachlorophenol	0.930	0.470 UL	0.470 X	0.470 R	C/I
PR79-BR-003-P4-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 X	0.470 R	C/I
PR79-BR-005-P1-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 X	0.480 R	C/I
PR79-BR-005-P2-01	N	1,4-Dioxane (p-Dioxane)	0.500	18.0	18.0	18.0 J	V2
PR79-BR-005-P2-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 X	0.500 R	C/I
PR79-BR-005-P3-01	N	Pentachlorophenol	1.00	0.520 UL	0.520 X	0.520 R	C/I
PR79-BR-005-P4-01	N	1,4-Dioxane (p-Dioxane)	0.990	17.0	17.0	17.0 J	V2
PR79-BR-005-P4-01	N	Pentachlorophenol	0.990	0.500 UL	0.500 X	0.500 R	C/I
PR79-GW-FD05-01	FD	Pentachlorophenol	0.970	0.480 UL	0.480 X	0.480 R	C/I

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-003-P1-01	N	Zinc	20.0	6.00 J	6.00 J	10.0 U	L
PR79-BR-003-P2-01	N	Aluminum	300	18.0 J	18.0 J	100 U	L
PR79-BR-003-P2-01	N	Zinc	20.0	15.0 J	15.0 J	20.0 U	L
PR79-BR-003-P3-01	N	Zinc	20.0	9.19 J	9.19 J	10.0 U	L
PR79-BR-003-P4-01	N	Zinc	20.0	1.80 J	1.80 J	10.0 U	L
PR79-BR-005-P1-01	N	Aluminum	300	22.0 J	22.0 J	100 U	L
PR79-BR-005-P1-01	N	Zinc	20.0	26.4	26.4 J	26.4	D3
PR79-BR-005-P3-01	N	Aluminum	300	19.0 J	19.0 J	100 U	L
PR79-BR-005-P4-01	N	Aluminum	300	18.0 J	18.0 J	100 U	L
PR79-BR-005-P4-01	N	Zinc	20.0	4.20 J	4.20 J	10.0 U	L
PR79-GW-FD05-01	FD	Aluminum	300	30.0 J	30.0 J	100 U	L
PR79-GW-FD05-01	FD	Zinc	20.0	57.9	57.9 J	57.9	D3

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-003-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-003-P1-01	N	Acetone	5.00	51.0 M	51.0 J	51.0 J	M/D/V1
PR79-BR-003-P1-01	N	Chloroethane	2.00	1.00 UM	1.00 U	1.00 UJ	V1
PR79-BR-003-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-003-P2-01	N	Acetone	5.00	42.0	42.0	42.0 J	V1
PR79-BR-003-P2-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
PR79-BR-003-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-003-P3-01	N	Acetone	5.00	16.0	16.0	16.0 J	V1

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-003-P3-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
PR79-BR-003-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-003-P4-01	N	Acetone	5.00	4.60 J	4.60 J	4.60 J	TR/V1
PR79-BR-003-P4-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1/V2
PR79-BR-005-P1-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-005-P1-01	N	Acetone	5.00	36.0	36.0 J	36.0 J	D3/V1
PR79-BR-005-P1-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
PR79-BR-005-P2-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-005-P2-01	N	Acetone	5.00	34.0	34.0 J	34.0 J	I/V1
PR79-BR-005-P2-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1
PR79-BR-005-P3-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-005-P3-01	N	Acetone	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-005-P3-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1/V2
PR79-BR-005-P4-01	N	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
PR79-BR-005-P4-01	N	Acetone	5.00	20.0	20.0	20.0 J	V1
PR79-BR-005-P4-01	N	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1/V2
PR79-GW-FD05-01	FD	1,1,1-Trichloroethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,1-Dichloroethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,1-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,2,3-Trichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,2,4-Trichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,2,4-Trimethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,2-Dichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,3,5-Trimethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	2-Butanone (MEK)	5.00	2.50 U	2.50 UJ	2.50 U	
PR79-GW-FD05-01	FD	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 UJ	2.50 UJ	V1/V2
PR79-GW-FD05-01	FD	Acetone	5.00	2.40 J	2.40 J	2.40 J	D3/TR/V1
PR79-GW-FD05-01	FD	Benzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Bromodichloromethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Bromomethane	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-GW-FD05-01	FD	Carbon disulfide	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Chloroethane	2.00	1.00 U	1.00 UJ	1.00 UJ	V1
PR79-GW-FD05-01	FD	Chloroform	1.00	3.10	3.10 J	3.10	
PR79-GW-FD05-01	FD	Chloromethane	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-GW-FD05-01	FD	cis-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Dibromochloromethane	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Ethylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-GW-FD05-01	FD	Isopropylbenzene (Cumene)	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	m,p-Xylene	2.00	1.00 U	1.00 UJ	1.00 U	
PR79-GW-FD05-01	FD	Methylene chloride	5.00	2.50 U	2.50 UJ	2.50 U	
PR79-GW-FD05-01	FD	n-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	n-Propylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	p-Cymene (p-Isopropyltoluene)	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	sec-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	tert-Butyl alcohol	10.0	5.00 U	5.00 UJ	5.00 UJ	V2
PR79-GW-FD05-01	FD	tert-Butylbenzene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Toluene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	trans-1,2-Dichloroethene	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Trichloroethene (TCE)	1.00	0.500 U	0.500 UJ	0.500 U	
PR79-GW-FD05-01	FD	Vinyl chloride	2.00	1.00 U	1.00 UJ	1.00 U	
TB-GW-20201221-01-01	TB	4-Methyl-2-pentanone (MIBK)	5.00	2.50 U	2.50 U	2.50 UJ	V1
TB-GW-20201221-01-01	TB	Acetone	5.00	2.50 U	2.50 U	2.50 UJ	V1
TB-GW-20201221-01-01	TB	Chloroethane	2.00	1.00 U	1.00 U	1.00 UJ	V1

Modified Qualifiers for test method SW9056A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-BR-003-P1-01	N	Nitrate (as N)	50.0	150	150 J	150	
PR79-BR-003-P1-01	N	Sulfate	1000	9000	9000 J	9000	
PR79-BR-005-P2-01	N	Chloride	4000	23000	23000 J	23000	
PR79-BR-005-P2-01	N	Nitrate (as N)	50.0	7200	7200 J	7200	
PR79-BR-005-P2-01	N	Nitrite (as N)	50.0	35.0 J	35.0 J	35.0 J	TR
PR79-BR-005-P2-01	N	Sulfate	1000	9600	9600 J	9600	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D	MS RPD
D3	Field Duplicate RPD
G2	Initial Calibration RSD/r^2/r
H1	Test Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292423 Alkalinity 2300 J ug/L. No qualifications required since sample results are >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0424-1 MS/MSD
Were MS/MSD recoveries within project acceptance limits?		•		MSD %R above criteria, see outlier report
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-005-P1-01 / PR79-GW-FD05-01
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A4500SF (Standard Method for Sulfide (Titrimetric, Iodine))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			TN0424-1 MS/MSD
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-005-P1-01 / PR79-GW-FD05-01 both ND
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: A5310B (Standard Method for the Determination of Total Organic Carbon, Combustion IR Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292683 TOC 0.15 J mg/L. No actions required since assoc samples >LOQ and >5X MB.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			TN0424-1 MS/MSD
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?	•			TN0424-9
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-005-P1-01 / PR79-GW-FD05-01 see outlier report. Parent and FD qualified (J).
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report. 2,4-DIBROMOPHENOL was not recovered (0-2%R) in all samples. Samples were not re-extracted and re-analyzed per communication with the client. Other surrogate recoveries below criteria. The ND results for pentachlorophenol, associated with surrogate 2,4-DIBROMOPHENOL, were rejected (R). Other results quailfied (J-/UJ). Note samples with rejected pentachlorophenol results were re-sampled and reported in a different SDG.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blanks not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		See outlier report. Three compounds below criteria, pentachlorophenol 0%R, surrogate 2,4-Dibromophenol 0%R. ND results for pentachlorophenol in all samples rejected (R). Results for Anthracene, Benzo(a)anthracene, Benzo(a)pyrene qualified (J-/UJ). Note samples with rejected pentachlorophenol results were re-sampled and reported in a different SDG.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01 (TN0424-1)
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report. ND result for pentachlorophenol in parent sample rejected (R) and 1,4-dioxane in parent sample qualified (J-) due to 0%R in MS/MSD. Other results qualified (J-/UJ) due to %R below criteria. Note samples with rejected pentachlorophenol results were re-sampled and reported in a different SDG.
Was the MS/MSD RPD within project acceptance limits?		•		See outlier report. No quals for ND results if RPD criteria not met.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-005-P1-01 / PR79-GW-FD05-01: precision criteria not met for 1,4-dioxane. Results in FD pair qualified (J).
Were QAPP specified laboratory PQLs achieved?		•		The adjusted LOQs for several ND compounds in sample PR79-BR-005-P3-01 (TN0424-7) did not match the LOQ on WS15 and were >PQL due to sample prep volume (<1L). LOQ >PQL for 1,4-dioxane in samples PR79-BR-005-P3-01 and PR79-BR-005-P4-01 due to dilution for high target compound concentration.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		ICAL 01/06/21 Inst N RSD outside criteria for Indeno(1,2,3-c,d)pyrene. ICV N1245 below criteria for Acenaphthylene and above criteria for 2-Methylnaphthalene. CCV N1262 above criteria for 2-Methylnaphthalene. CCV N1576 above criteria for Pentachlorophenol and Indeno(1,2,3-c,d)pyrene - these cmpds not reported from this run. CCV N1596 was analyzed 9 min past the 12h tune time and was below criteria for 14Diox; subsequent CCV N1597, N1598 were below criteria for 1,4-Dioxane. Based on discussion with the Corps, though calibration criteria are not assessed in a 2A validation, results for associated samples were qualified as estimated (J-/UJ).
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV outside criteria and calibration was not re-analyzed before sample analysis.
Were any data recommended for rejection (exclusion) in the data validation process?	•			ND results for pentachlorophenol in all samples rejected (R) due to low surrogate, LCS and MS recoveries. Note samples with rejected pentachlorophenol results were re-sampled and reported in a different SDG.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCs only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01 (TN0424-1)
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were surrogate recoveries within project acceptance limits?			•	NA for MEE analysis
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-005-P1-01 / PR79-GW-FD05-01 within criteria
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNL28ICW1: Al, Mg, Zn detected <LOQ. Outliers and quals added manually for FLDFLT sample results.
Were target analytes in the field blank less than MDL?			•	Field blank not submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01 total and dissolved (TN0424-01, -012)
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report, some %Rs above criteria
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-BR-003-P1-01 total and dissolved (TN0424-01, -012)
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-005-P1-01 / PR79-GW-FD05-01: Zinc (total and Dissolved) outside abs diff criteria. Results in FD pair qualified (J).
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			PBWNL28IMW1 ND
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01 total and dissolved (TN0424-01, -012)
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			PR79-BR-003-P1-01 total and dissolved (TN0424-01, -012)
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-005-P1-01 / PR79-GW-FD05-01: Lead (total and dissolved) outside criteria. Results in FD pair qualified (J) as estimated.
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			PBWOA05HGW2 ND
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01 total and dissolved (TN0424-01, -012)
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?		•		PDS for Hg above criteria but not required
Were the serial dilution RPD values within project acceptance limits?	•			PR79-BR-003-P1-01 total and dissolved (TN0424-01, -012)
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-005-P1-01 / PR79-GW-FD05-01 (total and dissolved) criteria met
Were QAPP specified laboratory PQLs achieved?	•			PQL per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			Sample PR79-GW-FD05-01 was analyzed on 14th day from collection, 4 minutes past 14d HT. Based on professional judgment, HT criteria met. Qualifiers were manually removed.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report. One surrogate above criteria in sample PR79-BR-005-P2-01. Positive results qualified (J+).
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292843-10: Methylene Chloride 1.7J ug/L. WG292913-2: Methylene Chloride 1.6J ug/L. See outlier report. Result in TB-GW-20201221-01-01 qualified as ND (U).
Were target analytes in the field blank less than MDL?	•			TB-GW-20201221-01-01: note result for methylene chloride was qualified as ND (U) due to MB contamination. No quals based on TB.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report. Acetone not recovered (0%) in MS only, acceptable in MSD. Parent sample qualified (J-). Chloroethane above criteria in MS only; no quals since bias is high and parent sample ND. t-butyl alcohol below criteria in MS only; parent sample qualified (UJ).
Was the MS/MSD RPD within project acceptance limits?		•		Acetone RPD outside criteria; parent sample qualified (J). No quals for chloroethane, RPD rounds to 20% and parent sample ND.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-BR-005-P1-01 / PR79-GW-FD05-01: acetone outside precision criteria. FD pair qualified (J).
Were QAPP specified laboratory PQLs achieved?	•			LOQ for t-butyl alcohol (10ug/L) does not match QAPP LOQ (5.0 ug/L) but meets PQL (100 ug/L).
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Based on discussions with the Corps, though calibration data are not reviewed as part of a 2A validation, results were manually qualified based on nonconformances noted in the case narrative. ICV for Inst C 01/01/21 calibration above criteria for chloroethane, below criteria for acetone and 4-methyl-2-pentanone. Outliers and qualifications manually entered for assoc samples. CCV above criteria for chloroethane assoc with samples TN0424-4RA, 7, 8. Results manually qualified (J+/UJ). CCV below criteria for t-butyl alcohol and 4-methyl-2-pentanone assoc with sample TN0424-9. Results manually qualified (UJ).
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV did not meet criteria and calibration was not reanalyzed.

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C
Were holding times met?	•			Samples within QAPP HT criteria for Nitrate/Nitrite (48h). and Chloride/Sulfate (28d). Sample PR79-BR-005-P2-01 was qualified by ADR but all anions were analyzed within HT criteria. Quals were removed by validator.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG292618: Nitrate 25 J ug/L, Sulfate 140 J ug/L WG292661 ND
Were target analytes in the field blank less than MDL?			•	Field blank not submitted
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only except for Chloride
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			TN0424-1
Were MS/MSD recoveries within project acceptance limits?		•		%R above criteria for Nitrite, result in parent sample qualified J+. See outlier report. Note MS recoveries on QC report of lab data (p 1170) match recoveries in raw data but do not match recoveries reported in ADR (nitrate and sulfate recoveries acceptable). Qualifications for nitrate and sulfate manually removed.
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	Lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-005-P1-01 / PR79-GW-FD05-01 precision criteria met
Were QAPP specified laboratory PQLs achieved?	•			PQLs per WS15 met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Review Questions

Method: VOCSIMC (Method SW8260C Selected Ion Monitoring (SIM) Mode)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			2.9, 2.1, 3.8, 3.4C, pH<2
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report. WG292786-2: chloroform 0.024 J ug/L. No quals required since assoc samples >LOQ and >5X MB. Other MBs ND.
Were target analytes in the field blank less than MDL?	•			TB-GW-20201221-02-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-BR-003-P1-01
Were MS/MSD recoveries within project acceptance limits?		•		%Rs above criteria for 3 compounds - see outlier report. Positive results in parent sample qualified (J+), no quals for ND results since bias is high.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-BR-005-P1-01 / PR79-GW-FD05-01
Were QAPP specified laboratory PQLs achieved?		•		PQLs per WS15 were met for all ND results. Sample-specific LOQs for chloroform above PQLs due to dilutions for high concentrations of chloroform.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Based on discussions with the Corps, though calibration data are not reviewed as part of a 2A validation, results were manually qualified based on nonconformances noted in the case narrative. CCV was above criteria for 124-TCBz assoc with dilution analyses of samples TN0424 -7, 8, 9. No quals required since 124-TCBz was not reported from this run.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for AECOMNIKE79-2

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	AECOMNIKE79-2
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-009-PW-01	SN3895-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-009-PW-01-F	SN3895-4		Field Sample/N					X		X		X				
PR79-WT-012-PW-01	SN3895-7		Field Sample/N	X		X	X		X		X			X		
PR79-WT-012-PW-01-F	SN3895-8		Field Sample/N					X		X		X				
PR79-WT-013-PW-01	SN3895-11		Field Sample/N	X		X	X		X		X			X		
PR79-WT-013-PW-01-F	SN3895-12		Field Sample/N					X		X		X				
PR79-WT-022-PW-01	SN3927-5		Field Sample/N	X		X	X		X		X			X		
PR79-WT-022-PW-01-F	SN3927-6		Field Sample/N					X		X		X				
PR79-WT-009-SD-01	SN3895-5	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-009-SD-01	SN3895-6	Solid	Field Sample/N		X		X									
PR79-WT-012-SD-01	SN3895-10	Solid	Field Sample/N		X		X									
PR79-WT-012-SD-01	SN3895-9	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-013-SD-01	SN3895-15	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-013-SD-01	SN3895-16	Solid	Field Sample/N		X		X									
PR79-WT-022-SD-01	SN3927-7	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-022-SD-01	SN3927-8	Solid	Field Sample/N		X		X									
TB-07-SD-01	SN3895-2	Solid	Trip Blank/TB											X		
TB-07-SD-01-0521	SN3927-1	Solid	Trip Blank/TB											X		
PR79-WT-013-SW-01	SN3895-13	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-013-SW-01-F	SN3895-14	Water	Field Sample/N					X		X		X				

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-009-PW-01	SN3895-3		Field Sample/N	X
PR79-WT-009-PW-01-F	SN3895-4		Field Sample/N	
PR79-WT-012-PW-01	SN3895-7		Field Sample/N	X
PR79-WT-012-PW-01-F	SN3895-8		Field Sample/N	
PR79-WT-013-PW-01	SN3895-11		Field Sample/N	X
PR79-WT-013-PW-01-F	SN3895-12		Field Sample/N	
PR79-WT-022-PW-01	SN3927-5		Field Sample/N	X
PR79-WT-022-PW-01-F	SN3927-6		Field Sample/N	
PR79-WT-009-SD-01	SN3895-5	Solid	Field Sample/N	
PR79-WT-009-SD-01	SN3895-6	Solid	Field Sample/N	
PR79-WT-012-SD-01	SN3895-10	Solid	Field Sample/N	
PR79-WT-012-SD-01	SN3895-9	Solid	Field Sample/N	
PR79-WT-013-SD-01	SN3895-15	Solid	Field Sample/N	
PR79-WT-013-SD-01	SN3895-16	Solid	Field Sample/N	
PR79-WT-022-SD-01	SN3927-7	Solid	Field Sample/N	
PR79-WT-022-SD-01	SN3927-8	Solid	Field Sample/N	
TB-07-SD-01	SN3895-2	Solid	Trip Blank/TB	
TB-07-SD-01-0521	SN3927-1	Solid	Trip Blank/TB	
PR79-WT-013-SW-01	SN3895-13	Water	Field Sample/N	X
PR79-WT-013-SW-01-F	SN3895-14	Water	Field Sample/N	

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Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-022-SW-01	SN3927-3	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-022-SW-01-F	SN3927-4	Water	Field Sample/N					X		X		X				
TB-02-PW-01	SN3895-1	Water	Trip Blank/TB											X		
TB-03-PW-01	SN3927-2	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-022-SW-01	SN3927-3	Water	Field Sample/N	X
PR79-WT-022-SW-01-F	SN3927-4	Water	Field Sample/N	
TB-02-PW-01	SN3895-1	Water	Trip Blank/TB	X
TB-03-PW-01	SN3927-2	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) AECOMNIKE79-2. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 154 results (13.37%) out of the 1152 results (sample and field QC samples) reported are qualified based on review and 15 results (1.30%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

Reviewed by Kristin Rutherford, Chemist, AECOM — July 30, 2020

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM — April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method AVS, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-SD-01 (MS)/ WG278876-4	Sulfide	0.000	75 - 125	30 - 125	percent	J/X	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Sulfide	0.310	0.240 U	0.240 R		umoles/ g	M
PR79-WT-012-SD-01	N	Sulfide	0.180	0.130 U	0.130 R		umoles/ g	M
PR79-WT-013-SD-01	N	Sulfide	0.150	0.110 U	0.110 R		umoles/ g	M
PR79-WT-022-SD-01	N	Sulfide	0.130	0.100 U	0.100 R		umoles/ g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278370-1 (LB)/ WG278370-1	Chrysene	0.002500	< 0.0017	< 0.02	mg/kg	U/None	L	
WG278370-1 (LB)/ WG278370-1	Fluoranthene	0.002600	< 0.0018	< 0.02	mg/kg	U/None	L	
WG278370-1 (LB)/ WG278370-1	Phenanthrene	0.002700	< 0.0018	< 0.02	mg/kg	U/None	L	
WG278370-1 (LB)/ WG278370-1	Pyrene	0.002900	< 0.0021	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-022-SD-01	N	Chrysene	0.0260	0.00520 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	Fluoranthene	0.0260	0.00620 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	Phenanthrene	0.0260	0.00440 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	Pyrene	0.0260	0.00730 J	0.0130 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278226-2 (BS)/ WG278226-2	1,4-Dioxane (p-Dioxane)	28.79	30 - 150	10 - 150	percent	J/UJ	C	
WG278370-2 (BS)/ WG278370-2	1,4-Dioxane (p-Dioxane)	27.89	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	1,4-Dioxane (p-Dioxane)	0.300	0.150 UL	0.150 UJ		mg/kg	C
PR79-WT-012-SD-01	N	1,4-Dioxane (p-Dioxane)	0.150	0.0760 UL	0.0760 UJ		mg/kg	C
PR79-WT-013-SD-01	N	1,4-Dioxane (p-Dioxane)	0.150	0.00490 JL	0.00490 J	-	mg/kg	C/TR
PR79-WT-022-SD-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.0640 UL	0.0640 UJ		mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-PW-01 (N)/ SN3895-3		7.060	< 7	< 14	days	J/UJ	H2	Prep Exceeds UWL
PR79-WT-012-PW-01 (N)/ SN3895-7		7.010	< 7	< 14	days	J/UJ	H2	Prep Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-022-SW-01 (N)/ SN3927-3	2-Methylnaphthalene -d10	6.640	43 - 92	10 - 92	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-022-SW-01	N	1,4-Dioxane (p-Dioxane)	0.250	0.180 U	0.180 R		ug/l	I
PR79-WT-022-SW-01	N	2-Methylnaphthalene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Acenaphthene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Acenaphthylene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Anthracene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Benzo(a)anthracene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Benzo(a)pyrene	0.200	0.0790 J	0.0790 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Benzo(b)fluoranthene	0.200	0.0940 J	0.0940 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Benzo(g,h,i)perylene	0.200	0.700	0.700 J	-	ug/l	I
PR79-WT-022-SW-01	N	Benzo(k)fluoranthene	0.200	0.120 J	0.120 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Chrysene	0.200	0.0460 J	0.0460 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Dibenz(a,h)anthracene	0.200	0.500	0.500 J	-	ug/l	I
PR79-WT-022-SW-01	N	Fluoranthene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Fluorene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.550	0.550 J	-	ug/l	I
PR79-WT-022-SW-01	N	Naphthalene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Phenanthrene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Pyrene	0.200	0.0990 U	0.0990 R		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27ICW1 (LB)	Vanadium	0.7400	< 0.23	< 10	ug/l	None/None	L	
PBWNE27ICW1 (LB)	Iron	12.00	< 5.4	< 100	ug/l	None/None	L	
PBWNE27ICW2 (LB)	Zinc	0.8000	< 0.72	< 20	ug/l	None/None	L	
PBWNE27ICW2 (LB)	Potassium	130.0	< 41	< 1000	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01-F	N	Potassium	1000	724 J	1000 U		ug/l	L
PR79-WT-009-PW-01-F	N	Zinc	20.0	3.90 J	10.0 U		ug/l	L
PR79-WT-012-PW-01-F	N	Potassium	1000	650 J	1000 U		ug/l	L
PR79-WT-012-PW-01-F	N	Zinc	20.0	3.90 J	10.0 U		ug/l	L
PR79-WT-013-PW-01-F	N	Zinc	20.0	2.20 J	10.0 U		ug/l	L
PR79-WT-013-SW-01-F	N	Zinc	20.0	2.80 J	10.0 U		ug/l	L
PR79-WT-022-PW-01-F	N	Iron	100	59.4 J	80.0 U		ug/l	L
PR79-WT-022-PW-01-F	N	Vanadium	10.0	0.280 J	4.00 U		ug/l	L
PR79-WT-022-SW-01-F	N	Iron	100	70.8 J	80.0 U		ug/l	L
PR79-WT-022-SW-01-F	N	Vanadium	10.0	0.470 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Chromium	0.06800	< 0.026	< 1	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Nickel	0.08100	< 0.044	< 1	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Lead	0.1200	< 0.087	< 0.5	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Zinc	0.5000	< 0.17	< 2	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Magnesium	0.8800	< 0.68	< 10	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Iron	1.600	< 1.4	< 10	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Potassium	18.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNF01ICS1 (LB)/ PBSNF01ICS1	Sodium	25.10	< 1.5	< 100	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Chromium	0.04700	< 0.026	< 1	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Zinc	0.2600	< 0.17	< 2	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Magnesium	1.000	< 0.68	< 10	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Aluminum	1.400	< 0.71	< 30	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Calcium	2.000	< 1.8	< 10	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Iron	3.000	< 1.4	< 10	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Sodium	5.200	< 1.5	< 100	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Potassium	8.000	< 2.9	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Sodium	220	105 J	110 U		mg/kg	L
PR79-WT-012-SD-01	N	Sodium	120	71.9 J	120 U		mg/kg	L
PR79-WT-013-SD-01	N	Sodium	99.0	78.4 J	99.0 U		mg/kg	L
PR79-WT-022-SD-01	N	Sodium	110	95.5 J	110 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Replicate RPD

The objective of duplicate sample (LR) analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. Duplicate analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Laboratory duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-SD-01 (LR)/ SN3895-006D	Nickel	0.02290	< 0.01	< 0.01	umoles/ g	J/UJ	D1	
PR79-WT-009-SD-01 (LR)/ SN3895-006D	Zinc	0.05070	< 0.018	< 0.018	umoles/ g	J/UJ	D1	
PR79-WT-009-SD-01 (LR)/ SN3895-006D	Copper	0.05580	< 0.024	< 0.024	umoles/ g	J/UJ	D1	
PR79-WT-009-SD-01 (LR)/ SN3895-006D	Lead	100.0	< 20	< 20	rpd	J/UJ	D1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Replicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Copper	0.0240	0.0350 *	0.0350 J		umoles/ g	D1
PR79-WT-009-SD-01	N	Lead	0.00140	0.0490 N*	0.0490 J	-	umoles/ g	D1/M
PR79-WT-009-SD-01	N	Nickel	0.0100	0.0163 *	0.0163 J		umoles/ g	D1
PR79-WT-009-SD-01	N	Zinc	0.0180	0.0543 *	0.0543 J		umoles/ g	D1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-SD-01 (MS)/ SN3895-006S	Lead	56.68	81 - 112	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Lead	0.00140	0.0490 N*	0.0490 J	-	umoles/ g	D1/M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27ICW1 (LB)/ PBWNE27ICW1	Vanadium	0.7400	< 0.23	< 10	ug/l	U/None	L	
PBWNE27ICW1 (LB)/ PBWNE27ICW1	Iron	12.00	< 5.4	< 100	ug/l	U/None	L	
PBWNE27ICW2 (LB)/ PBWNE27ICW2	Zinc	0.8000	< 0.72	< 20	ug/l	U/None	L	
PBWNE27ICW2 (LB)/ PBWNE27ICW2	Potassium	130.0	< 41	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01	N	Potassium	1000	721 J	1000 U		ug/l	L
PR79-WT-009-PW-01	N	Zinc	20.0	5.50 J	10.0 U		ug/l	L
PR79-WT-012-PW-01	N	Potassium	1000	647 J	1000 U		ug/l	L
PR79-WT-012-PW-01	N	Zinc	20.0	3.20 J	10.0 U		ug/l	L
PR79-WT-013-PW-01	N	Zinc	20.0	18.5 J	20.0 U		ug/l	L
PR79-WT-013-SW-01	N	Zinc	20.0	2.40 J	10.0 U		ug/l	L
PR79-WT-022-PW-01	N	Vanadium	10.0	0.770 J	4.00 U		ug/l	L
PR79-WT-022-SW-01	N	Iron	100	75.9 J	80.0 U		ug/l	L
PR79-WT-022-SW-01	N	Vanadium	10.0	0.530 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27IMW1 (LB)	Beryllium	0.05700	< 0.034	< 1	ug/l	None/None	L	
PBWNE27IMW2 (LB)	Beryllium	0.04600	< 0.034	< 1	ug/l	None/None	L	
PBWNE27IMW2 (LB)	Lead	0.1600	< 0.075	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01-F	N	Beryllium	1.00	0.0720 J	0.200 U		ug/l	L
PR79-WT-009-PW-01-F	N	Lead	1.00	0.210 J	0.500 U		ug/l	L
PR79-WT-012-PW-01-F	N	Beryllium	1.00	0.120 J	0.200 U		ug/l	L
PR79-WT-012-PW-01-F	N	Lead	1.00	0.700 J	1.00 U		ug/l	L
PR79-WT-013-PW-01-F	N	Beryllium	1.00	0.0880 J	0.200 U		ug/l	L
PR79-WT-013-SW-01-F	N	Beryllium	1.00	0.0520 J	0.200 U		ug/l	L
PR79-WT-013-SW-01-F	N	Lead	1.00	0.771 J	1.00 U		ug/l	L
PR79-WT-022-PW-01-F	N	Beryllium	1.00	0.0960 J	0.200 U		ug/l	L
PR79-WT-022-SW-01-F	N	Beryllium	1.00	0.0850 J	0.200 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNF01IMS1 (LB)/ PBSNF01IMS1	Beryllium	0.005400	< 0.0041	< 0.1	mg/kg	U/None	L	
PBSNF03IMS1 (LB)/ PBSNF03IMS1	Cobalt	0.01400	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27IMW1 (LB)/ PBWNE27IMW1	Beryllium	0.05700	< 0.034	< 1	ug/l	U/None	L	
PBWNE27IMW2 (LB)/ PBWNE27IMW2	Beryllium	0.04600	< 0.034	< 1	ug/l	U/None	L	
PBWNE27IMW2 (LB)/ PBWNE27IMW2	Lead	0.1600	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-009-PW-01	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-012-PW-01	N	Beryllium	1.00	0.160 J	0.200 U		ug/l	L
PR79-WT-012-PW-01	N	Lead	1.00	0.917 J	1.00 U		ug/l	L
PR79-WT-013-PW-01	N	Beryllium	1.00	0.366 J	1.00 U		ug/l	L
PR79-WT-013-SW-01	N	Beryllium	1.00	0.0580 J	0.200 U		ug/l	L
PR79-WT-022-PW-01	N	Beryllium	1.00	0.0850 J	0.200 U		ug/l	L
PR79-WT-022-SW-01	N	Beryllium	1.00	0.0850 J	0.200 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278356-1 (BS)/ WG278356-1	1,1-Dichloroethane	125.4	77 - 125	10 - 125	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-022-PW-01 (N)/ SN3927-5	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	117.0	85 - 114	10 - 114	percent	J/None	I	
PR79-WT-022-PW-01 (N)/ SN3927-5	Dibromofluoromethane	120.0	80 - 119	10 - 119	percent	J/None	I	
PR79-WT-022-SW-01 (N)/ SN3927-3	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	117.0	85 - 114	10 - 114	percent	J/None	I	
TB-03-PW-01 (TB)/ SN3927-2	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	116.0	85 - 114	10 - 114	percent	J/None	I	
TB-03-PW-01 (TB)/ SN3927-2	Dibromofluoromethane	121.0	80 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
TB-03-PW-01	TB	Methylene chloride	5.00	1.30 J	1.30 J	+	ug/l	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-SD-01 (N)/ SN3895-5	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	60.90	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-012-SD-01 (N)/ SN3895-9	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	65.50	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	1,1,1-Trichloroethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,1-Dichloroethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,1-Dichloroethene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2,3-Trichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2,4-Trichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2,4-Trimethylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2-Dichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,3,5-Trimethylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,3-Dichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	2-Butanone (MEK)	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Acetone	0.0780	0.0230 J	0.0230 J	-	mg/kg	I/TR
PR79-WT-009-SD-01	N	Benzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Bromodichloromethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Bromomethane	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Carbon disulfide	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Chloroethane	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Chloroform	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Chloromethane	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	cis-1,2-Dichloroethene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Dibromochloromethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Ethylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Isopropylbenzene (Cumene)	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	m,p-Xylene	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Methylene chloride	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	n-Butylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	n-Propylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	o-Xylene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	sec-Butylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	tert-Butyl alcohol	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	tert-Butylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Toluene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	trans-1,2-Dichloroethene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Trichloroethene (TCE)	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Vinyl chloride	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,1,1-Trichloroethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,1-Dichloroethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,1-Dichloroethene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2,3-Trichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2,4-Trichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2,4-Trimethylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2-Dichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,3,5-Trimethylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,3-Dichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	2-Butanone (MEK)	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Acetone	0.0480	0.0740	0.0740 J	-	mg/kg	I
PR79-WT-012-SD-01	N	Benzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Bromodichloromethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Bromomethane	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Carbon disulfide	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Chloroethane	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Chloroform	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Chloromethane	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	cis-1,2-Dichloroethene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Dibromochloromethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Ethylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Isopropylbenzene (Cumene)	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	m,p-Xylene	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Methylene chloride	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	n-Butylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	n-Propylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	o-Xylene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	sec-Butylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	tert-Butyl alcohol	0.0480	0.0240 U	0.0240 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-012-SD-01	N	tert-Butylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Toluene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	trans-1,2-Dichloroethene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Trichloroethene (TCE)	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Vinyl chloride	0.0190	0.00950 U	0.00950 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-PW-01 (TB)/ SN3895-1	Methylene chloride	1.900	< 1.1	< 5	ug/l	U/None	T	
TB-03-PW-01 (TB)/ SN3927-2	Methylene chloride	1.300	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Trip Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01	N	Methylene chloride	5.00	2.00 J	2.50 U		ug/l	T
PR79-WT-012-PW-01	N	Methylene chloride	5.00	2.10 J	2.50 U		ug/l	T
PR79-WT-013-PW-01	N	Methylene chloride	5.00	1.70 J	2.50 U		ug/l	T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-SD-01 (N)/ SN3895-5		171.6	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-012-SD-01 (N)/ SN3895-9		170.3	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-013-SD-01 (N)/ SN3895-15		167.5	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-022-SD-01 (N)/ SN3927-7		144.5	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	pH	0.100	6.10	6.10 J	-	ph units	H2
PR79-WT-012-SD-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-WT-013-SD-01	N	pH	0.100	5.90	5.90 J	-	ph units	H2
PR79-WT-022-SD-01	N	pH	0.100	6.20	6.20 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-PW-01 (TB)/ SN3895-1	Benzene	0.01500	< 0.009	< 0.05	ug/l	U/None	T	
TB-02-PW-01 (TB)/ SN3895-1	Chloroform	0.01900	< 0.0061	< 0.1	ug/l	U/None	T	
TB-03-PW-01 (TB)/ SN3927-2	Benzene	0.01500	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: AVS Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Sulfide	0.310	0.240 U	0.240 R		umoles/g	M
PR79-WT-012-SD-01	N	Sulfide	0.180	0.130 U	0.130 R		umoles/g	M
PR79-WT-013-SD-01	N	Sulfide	0.150	0.110 U	0.110 R		umoles/g	M
PR79-WT-022-SD-01	N	Sulfide	0.130	0.100 U	0.100 R		umoles/g	M

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-022-SW-01	N	1,4-Dioxane (p-Dioxane)	0.250	0.180 U	0.180 R		ug/l	I
PR79-WT-022-SW-01	N	2-Methylnaphthalene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Acenaphthene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Acenaphthylene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Anthracene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Benzo(a)anthracene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Benzo(a)pyrene	0.200	0.0790 J	0.0790 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Benzo(b)fluoranthene	0.200	0.0940 J	0.0940 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Benzo(g,h,i)perylene	0.200	0.700	0.700 J	-	ug/l	I
PR79-WT-022-SW-01	N	Benzo(k)fluoranthene	0.200	0.120 J	0.120 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Chrysene	0.200	0.0460 J	0.0460 J	-	ug/l	I/TR
PR79-WT-022-SW-01	N	Dibenz(a,h)anthracene	0.200	0.500	0.500 J	-	ug/l	I
PR79-WT-022-SW-01	N	Fluoranthene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Fluorene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Indeno(1,2,3-c,d)pyrene	0.200	0.550	0.550 J	-	ug/l	I
PR79-WT-022-SW-01	N	Naphthalene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Phenanthrene	0.200	0.0990 U	0.0990 R		ug/l	I
PR79-WT-022-SW-01	N	Pyrene	0.200	0.0990 U	0.0990 R		ug/l	I

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	1,4-Dioxane (p-Dioxane)	0.300	0.150 UL	0.150 UJ		mg/kg	C
PR79-WT-012-SD-01	N	1,4-Dioxane (p-Dioxane)	0.150	0.0760 UL	0.0760 UJ		mg/kg	C
PR79-WT-013-SD-01	N	1,4-Dioxane (p-Dioxane)	0.150	0.00490 JL	0.00490 J	-	mg/kg	C/TR
PR79-WT-022-SD-01	N	Chrysene	0.0260	0.00520 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	Fluoranthene	0.0260	0.00620 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	Phenanthrene	0.0260	0.00440 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	Pyrene	0.0260	0.00730 J	0.0130 U		mg/kg	L
PR79-WT-022-SD-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.0640 UL	0.0640 UJ		mg/kg	C

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01-F	N	Potassium	1000	724 J	1000 U		ug/l	L

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01-F	N	Zinc	20.0	3.90 J	10.0 U		ug/l	L
PR79-WT-012-PW-01-F	N	Potassium	1000	650 J	1000 U		ug/l	L
PR79-WT-012-PW-01-F	N	Zinc	20.0	3.90 J	10.0 U		ug/l	L
PR79-WT-013-PW-01-F	N	Zinc	20.0	2.20 J	10.0 U		ug/l	L
PR79-WT-013-SW-01-F	N	Zinc	20.0	2.80 J	10.0 U		ug/l	L
PR79-WT-022-PW-01-F	N	Iron	100	59.4 J	80.0 U		ug/l	L
PR79-WT-022-PW-01-F	N	Vanadium	10.0	0.280 J	4.00 U		ug/l	L
PR79-WT-022-SW-01-F	N	Iron	100	70.8 J	80.0 U		ug/l	L
PR79-WT-022-SW-01-F	N	Vanadium	10.0	0.470 J	4.00 U		ug/l	L

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Copper	0.0240	0.0350 *	0.0350 J		umoles/g	D1
PR79-WT-009-SD-01	N	Lead	0.00140	0.0490 N*	0.0490 J	-	umoles/g	D1/M
PR79-WT-009-SD-01	N	Nickel	0.0100	0.0163 *	0.0163 J		umoles/g	D1
PR79-WT-009-SD-01	N	Zinc	0.0180	0.0543 *	0.0543 J		umoles/g	D1

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Sodium	220	105 J	110 U		mg/kg	L
PR79-WT-012-SD-01	N	Sodium	120	71.9 J	120 U		mg/kg	L
PR79-WT-013-SD-01	N	Sodium	99.0	78.4 J	99.0 U		mg/kg	L
PR79-WT-022-SD-01	N	Sodium	110	95.5 J	110 U		mg/kg	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01	N	Potassium	1000	721 J	1000 U		ug/l	L
PR79-WT-009-PW-01	N	Zinc	20.0	5.50 J	10.0 U		ug/l	L
PR79-WT-012-PW-01	N	Potassium	1000	647 J	1000 U		ug/l	L
PR79-WT-012-PW-01	N	Zinc	20.0	3.20 J	10.0 U		ug/l	L
PR79-WT-013-PW-01	N	Zinc	20.0	18.5 J	20.0 U		ug/l	L
PR79-WT-013-SW-01	N	Zinc	20.0	2.40 J	10.0 U		ug/l	L
PR79-WT-022-PW-01	N	Vanadium	10.0	0.770 J	4.00 U		ug/l	L
PR79-WT-022-SW-01	N	Iron	100	75.9 J	80.0 U		ug/l	L
PR79-WT-022-SW-01	N	Vanadium	10.0	0.530 J	4.00 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01-F	N	Beryllium	1.00	0.0720 J	0.200 U		ug/l	L
PR79-WT-009-PW-01-F	N	Lead	1.00	0.210 J	0.500 U		ug/l	L
PR79-WT-012-PW-01-F	N	Beryllium	1.00	0.120 J	0.200 U		ug/l	L
PR79-WT-012-PW-01-F	N	Lead	1.00	0.700 J	1.00 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-013-PW-01-F	N	Beryllium	1.00	0.0880 J	0.200 U		ug/l	L
PR79-WT-013-SW-01-F	N	Beryllium	1.00	0.0520 J	0.200 U		ug/l	L
PR79-WT-013-SW-01-F	N	Lead	1.00	0.771 J	1.00 U		ug/l	L
PR79-WT-022-PW-01-F	N	Beryllium	1.00	0.0960 J	0.200 U		ug/l	L
PR79-WT-022-SW-01-F	N	Beryllium	1.00	0.0850 J	0.200 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-009-PW-01	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-012-PW-01	N	Beryllium	1.00	0.160 J	0.200 U		ug/l	L
PR79-WT-012-PW-01	N	Lead	1.00	0.917 J	1.00 U		ug/l	L
PR79-WT-013-PW-01	N	Beryllium	1.00	0.366 J	1.00 U		ug/l	L
PR79-WT-013-SW-01	N	Beryllium	1.00	0.0580 J	0.200 U		ug/l	L
PR79-WT-022-PW-01	N	Beryllium	1.00	0.0850 J	0.200 U		ug/l	L
PR79-WT-022-SW-01	N	Beryllium	1.00	0.0850 J	0.200 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5030

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-PW-01	N	Methylene chloride	5.00	2.00 J	2.50 U		ug/l	T
PR79-WT-012-PW-01	N	Methylene chloride	5.00	2.10 J	2.50 U		ug/l	T
PR79-WT-013-PW-01	N	Methylene chloride	5.00	1.70 J	2.50 U		ug/l	T
TB-03-PW-01	TB	Methylene chloride	5.00	1.30 J	1.30 J	+	ug/l	I/TR

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	1,1,1-Trichloroethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,1-Dichloroethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,1-Dichloroethene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2,3-Trichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2,4-Trichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2,4-Trimethylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,2-Dichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,3,5-Trimethylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	1,3-Dichlorobenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	2-Butanone (MEK)	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Acetone	0.0780	0.0230 J	0.0230 J	-	mg/kg	I/TR
PR79-WT-009-SD-01	N	Benzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Bromodichloromethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Bromomethane	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Carbon disulfide	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Chloroethane	0.0310	0.0160 U	0.0160 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	Chloroform	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Chloromethane	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	cis-1,2-Dichloroethene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Dibromochloromethane	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Ethylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Isopropylbenzene (Cumene)	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	m,p-Xylene	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Methylene chloride	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	n-Butylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	n-Propylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	o-Xylene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	sec-Butylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	tert-Butyl alcohol	0.0780	0.0390 U	0.0390 UJ		mg/kg	I
PR79-WT-009-SD-01	N	tert-Butylbenzene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Toluene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	trans-1,2-Dichloroethene	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Trichloroethene (TCE)	0.0160	0.00780 U	0.00780 UJ		mg/kg	I
PR79-WT-009-SD-01	N	Vinyl chloride	0.0310	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,1,1-Trichloroethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,1-Dichloroethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,1-Dichloroethene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2,3-Trichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2,4-Trichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2,4-Trimethylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,2-Dichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,3,5-Trimethylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	1,3-Dichlorobenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	2-Butanone (MEK)	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Acetone	0.0480	0.0740	0.0740 J	-	mg/kg	I
PR79-WT-012-SD-01	N	Benzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Bromodichloromethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Bromomethane	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Carbon disulfide	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Chloroethane	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Chloroform	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Chloromethane	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	cis-1,2-Dichloroethene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Dibromochloromethane	0.00950	0.00480 U	0.00480 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-012-SD-01	N	Ethylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Isopropylbenzene (Cumene)	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	m,p-Xylene	0.0190	0.00950 U	0.00950 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Methylene chloride	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	n-Butylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	n-Propylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	o-Xylene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	sec-Butylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	tert-Butyl alcohol	0.0480	0.0240 U	0.0240 UJ		mg/kg	I
PR79-WT-012-SD-01	N	tert-Butylbenzene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Toluene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	trans-1,2-Dichloroethene	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Trichloroethene (TCE)	0.00950	0.00480 U	0.00480 UJ		mg/kg	I
PR79-WT-012-SD-01	N	Vinyl chloride	0.0190	0.00950 U	0.00950 UJ		mg/kg	I

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SD-01	N	pH	0.100	6.10	6.10 J	-	ph units	H2
PR79-WT-012-SD-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-WT-013-SD-01	N	pH	0.100	5.90	5.90 J	-	ph units	H2
PR79-WT-022-SD-01	N	pH	0.100	6.20	6.20 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-009-SD-01	N	Sulfide	0.310	0.240 U	0.240 X	0.240 R	M
PR79-WT-012-SD-01	N	Sulfide	0.180	0.130 U	0.130 X	0.130 R	M
PR79-WT-013-SD-01	N	Sulfide	0.150	0.110 U	0.110 X	0.110 R	M
PR79-WT-022-SD-01	N	Sulfide	0.130	0.100 U	0.100 X	0.100 R	M

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-009-PW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-009-PW-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Acenaphthylene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Benzo(a)anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Benzo(a)pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Benzo(b)fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Benzo(k)fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Chrysene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Fluorene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Naphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Pentachlorophenol	0.960	0.480 U	0.480 UJ	0.480 U	
PR79-WT-009-PW-01	N	Phenanthrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-009-PW-01	N	Pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-012-PW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-012-PW-01	N	2-Methylnaphthalene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Acenaphthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Acenaphthylene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Anthracene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Benzo(a)anthracene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Benzo(a)pyrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Benzo(b)fluoranthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Benzo(k)fluoranthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Chrysene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Fluoranthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Fluorene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-012-PW-01	N	Naphthalene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Pentachlorophenol	0.970	0.480 U	0.480 UJ	0.480 U	
PR79-WT-012-PW-01	N	Phenanthrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-012-PW-01	N	Pyrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-022-SW-01	N	1,4-Dioxane (p-Dioxane)	0.250	0.180 U	0.180 X	0.180 R	I
PR79-WT-022-SW-01	N	2-Methylnaphthalene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Acenaphthene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Acenaphthylene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Anthracene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Benzo(a)anthracene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Fluoranthene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Fluorene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Naphthalene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Phenanthrene	0.200	0.0990 U	0.0990 X	0.0990 R	I
PR79-WT-022-SW-01	N	Pyrene	0.200	0.0990 U	0.0990 X	0.0990 R	I

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-009-PW-01-F	N	Potassium	1000	724 J	724 J	1000 U	L
PR79-WT-009-PW-01-F	N	Zinc	20.0	3.90 J	3.90 J	10.0 U	L
PR79-WT-012-PW-01-F	N	Potassium	1000	650 J	650 J	1000 U	L
PR79-WT-012-PW-01-F	N	Zinc	20.0	3.90 J	3.90 J	10.0 U	L
PR79-WT-013-PW-01-F	N	Zinc	20.0	2.20 J	2.20 J	10.0 U	L
PR79-WT-013-SW-01-F	N	Zinc	20.0	2.80 J	2.80 J	10.0 U	L
PR79-WT-022-PW-01-F	N	Iron	100	59.4 J	59.4 J	80.0 U	L
PR79-WT-022-PW-01-F	N	Vanadium	10.0	0.280 J	0.280 J	4.00 U	L
PR79-WT-022-SW-01-F	N	Iron	100	70.8 J	70.8 J	80.0 U	L
PR79-WT-022-SW-01-F	N	Vanadium	10.0	0.470 J	0.470 J	4.00 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-009-PW-01-F	N	Beryllium	1.00	0.0720 J	0.0720 J	0.200 U	L
PR79-WT-009-PW-01-F	N	Lead	1.00	0.210 J	0.210 J	0.500 U	L
PR79-WT-012-PW-01-F	N	Beryllium	1.00	0.120 J	0.120 J	0.200 U	L
PR79-WT-012-PW-01-F	N	Lead	1.00	0.700 J	0.700 J	1.00 U	L
PR79-WT-013-PW-01-F	N	Beryllium	1.00	0.0880 J	0.0880 J	0.200 U	L
PR79-WT-013-SW-01-F	N	Beryllium	1.00	0.0520 J	0.0520 J	0.200 U	L
PR79-WT-013-SW-01-F	N	Lead	1.00	0.771 J	0.771 J	1.00 U	L
PR79-WT-022-PW-01-F	N	Beryllium	1.00	0.0960 J	0.0960 J	0.200 U	L
PR79-WT-022-SW-01-F	N	Beryllium	1.00	0.0850 J	0.0850 J	0.200 U	L

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-009-PW-01	N	Methylene chloride	5.00	2.00 J	2.00 J	2.50 U	T
PR79-WT-012-PW-01	N	Methylene chloride	5.00	2.10 J	2.10 J	2.50 U	T
PR79-WT-013-PW-01	N	Methylene chloride	5.00	1.70 J	1.70 J	2.50 U	T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D1	Lab Replicate RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no Lab Dup
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report. SN3895-6 0% recovery. All SD in batch; ND results for AVS rejected.
Was the MS/MSD RPD within project acceptance limits?			•	MS only
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			both ND
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			All SD in batch; ND results for AVS rejected.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			Note results were qualified for samples -3, -7 since prep time was >7d (7.06 days). Based on prof judgment, prep time was acceptable as 7d and quals were removed.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		PR79-WT-022-SW-01 (SN3927-3) 2MN <10%R see outlier report; pos results qualified (J), ND results rejected (R). Not reanalyzed due to holding time.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report; SD blank WG278370-1 assoc with SN3927-7
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report; WG278226-2, WG278370-2
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this set
Were QAPP specified laboratory PQLs achieved?		•		BNASIM/SW3520: 6 analytes in 1 sample did not meet PQLs; BNASIM/SW3550: 26 analytes in 4 samples did not meet PQLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high for Indeno(1,2,3-c,d)pyrene, Pentachlorophenol, assoc results in PR79-WT-009-SD-01, PR79-WT-012-SD-01, PR79-WT-013-SD-01 may be biased high; Pentachlorophenol results were ND. CCV low for 14-Dioxane, high for Dibenz (a,h)anthracene. 14-Diox in PR79-WT-009-SD-01, PR79-WT-012-SD-01, PR79-WT-013-SD-01 may be biased low. Dibenzo(ah)anthracene assoc results ND. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			ND results in SN3927-3 were rejected (R) due to surrogate recoveries.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. Blank quals for filtered samples manually added.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			6010 SEM MS only
Were MS/MSD recoveries within project acceptance limits?		•		see outlier for SEM Pb low %R, qual parent only
Was the MS/MSD RPD within project acceptance limits?			•	MS only
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			for results >50X LOQ
Was the laboratory duplicate RPD within project acceptance limits?		•		see outlier report, quals to parent only
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report; blank quals manually applied to filtered samples.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS on 6010, Hg only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this set
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report. SW6020A/SW3050B: 9 analytes in 3 samples did not meet PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PW only
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS for 7470A on PW only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report: 1 analyte in 1 sample did not meet PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		see outlier report for TB-02-PW-01, TB-03-PW-01. Results for methylene chloride in PW samples with results <LOQ were negated manually.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FDs in this data set
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: SW8260C/SW5035 32 analytes in 4 samples did not meet PQLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV high for 11DCA, 11DCE assoc results ND. CCV low for Chloromethane, assoc results in PR79-WT-009-SD-01, PR79-WT-012-SD-01, PR79-WT-013-SD-01, TB-07-SD-01 may be biased low. Low IS PR79-WT-009-SD-01, PR79-WT-012-SD-01: assoc pos results for acetone may be biased high. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		Based on case narrative, ICV did not meet criteria - analysis should have been stopped and samples reanalyzed.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		See outlier report. Note lab did not narrative holding time exceedance in case narrative.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	lab dup not analyzed
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			Note lab did not narrative holding time exceedance in case narrative.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			MB ND
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			within limits
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 1 analyte in 1 sample did not mee PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for AECOMNIKE79-1

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	AECOMNIKE79-1
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-111-AS-01	SN3553-2	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-111-AS-01	SN3553-6	Solid	Field Sample/N			X					
PR79-SB-111-BS-01	SN3553-3	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-111-BS-01	SN3553-7	Solid	Field Sample/N			X					
PR79-SB-112-AS-01	SN3552-11	Solid	Field Sample/N			X					
PR79-SB-112-AS-01	SN3552-5	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-112-BS-01	SN3552-12	Solid	Field Sample/N			X					
PR79-SB-112-BS-01	SN3552-6	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-113-AS-01	SN3552-1	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-113-AS-01	SN3552-7	Solid	Field Sample/N			X					
PR79-SB-113-BS-01	SN3552-2	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-113-BS-01	SN3552-8	Solid	Field Sample/N			X					
PR79-SB-114-BS-01	SN3553-1	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-114-BS-01	SN3553-5	Solid	Field Sample/N			X					
PR79-SB-115-BS-01	SN3681-1	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-115-BS-01	SN3681-3	Solid	Field Sample/N			X					
PR79-SB-116-BS-01	SN3681-2	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-116-BS-01	SN3681-4	Solid	Field Sample/N			X					
PR79-SB-117-AS-01	SN3616-1	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-117-AS-01	SN3616-7	Solid	Field Sample/N			X					

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-117-BS-01	SN3616-2	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-117-BS-01	SN3616-8	Solid	Field Sample/N			X					
PR79-SB-118-AS-01	SN3616-3	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-118-AS-01	SN3616-9	Solid	Field Sample/N			X					
PR79-SB-118-BS-01	SN3616-10	Solid	Field Sample/N			X					
PR79-SB-118-BS-01	SN3616-4	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-119-AS-01	SN3616-11	Solid	Field Sample/N			X					
PR79-SB-119-AS-01	SN3616-5	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-119-BS-01	SN3616-12	Solid	Field Sample/N			X					
PR79-SB-119-BS-01	SN3616-6	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-120-AS-01	SN3762-1	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-120-AS-01	SN3762-2	Solid	Field Sample/N			X					
PR79-SB-FD03-01	SN3552-3	Solid	Field Duplicate/FD	X	X		X	X		X	X
PR79-SB-FD03-01	SN3552-9	Solid	Field Duplicate/FD			X					
PR79-SB-FD04-01	SN3552-10	Solid	Field Duplicate/FD			X					
PR79-SB-FD04-01	SN3552-4	Solid	Field Duplicate/FD	X	X		X	X	X		
TB-01-SO-01	SN3553-4	Solid	Trip Blank/TB						X		
EB-03-SOBG-01	SN3762-3	Water	Equipment Blank/EB						X		

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) AECOMNIKE79-1. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Equipment Blank
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 131 results (10.58%) out of the 1238 results (sample and field QC samples) reported are qualified based on review and 1 results (0.08%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 09, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-113-BS-01 (N)/ SN3552-4	Pyrene	59.79	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-113-BS-01	N	Pyrene	0.0190	0.340 L	0.340 J	+	mg/kg	D3/C
PR79-SB-FD04-01	FD	Pyrene	0.0410	0.630 L	0.630 J	+	mg/kg	D3/C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277866-1 (LB)/ WG277866-1	Chrysene	0.001800	< 0.0017	< 0.02	mg/kg	U/None	L	
WG277866-1 (LB)/ WG277866-1	Pyrene	0.002400	< 0.0021	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-116-BS-01	N	Chrysene	0.0200	0.00370 J	0.0100 U		mg/kg	L
PR79-SB-116-BS-01	N	Pyrene	0.0200	0.00440 J	0.0100 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277373-2 (BS)/ WG277373-2	Pyrene	139.1	55 - 117	10 - 117	percent	J/None	C	
WG277373-2 (BS)/ WG277373-2	Phenanthrene	167.9	49 - 113	10 - 113	percent	J/None	C	
WG277373-2 (BS)/ WG277373-2	Fluoranthene	173.9	55 - 119	10 - 119	percent	J/None	C	
WG277373-2 (BS)/ WG277373-2	1,4-Dioxane (p-Dioxane)	29.24	30 - 150	10 - 150	percent	J/UJ	C	
WG277641-2 (BS)/ WG277641-2	1,4-Dioxane (p-Dioxane)	27.74	30 - 150	10 - 150	percent	J/UJ	C	
WG277866-2 (BS)/ WG277866-2	1,4-Dioxane (p-Dioxane)	23.24	30 - 150	10 - 150	percent	J/UJ	C	
WG277866-2 (BS)/ WG277866-2	Benzo (b)fluoranthene	46.33	53 - 128	10 - 128	percent	J/UJ	C	
WG277866-2 (BS)/ WG277866-2	Dibenz (a,h)anthracene	47.38	50 - 129	10 - 129	percent	J/UJ	C	
WG277866-2 (BS)/ WG277866-2	Fluoranthene	49.33	55 - 119	10 - 119	percent	J/UJ	C	
WG277866-2 (BS)/ WG277866-2	Benzo (a)anthracene	52.92	54 - 122	10 - 122	percent	J/UJ	C	
WG278812-2 (BS)/ WG278812-2	1,4-Dioxane (p-Dioxane)	24.29	30 - 150	10 - 150	percent	J/UJ	C	
WG278891-2 (BS)/ WG278891-2	1,4-Dioxane (p-Dioxane)	0.000	30 - 150	10 - 150	percent	J/X	C	
WG278891-2 (BS)/ WG278891-2	Pentachlorophenol	0.000	36 - 129	10 - 129	percent	J/X	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-AS-01	N	Fluoranthene	0.0210	0.0170 JL	0.0170 J	+	mg/kg	C/TR
PR79-SB-111-AS-01	N	Phenanthrene	0.0210	0.00810 JL	0.00810 J	+	mg/kg	C/TR
PR79-SB-111-AS-01	N	Pyrene	0.0210	0.0130 JL	0.0130 J	+	mg/kg	C/TR
PR79-SB-111-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00170 JL	0.00170 J	-	mg/kg	C/TR
PR79-SB-111-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0920	0.00120 JL	0.00120 J	-	mg/kg	C/TR
PR79-SB-112-AS-01	N	Fluoranthene	0.0220	0.170 L	0.170 J	+	mg/kg	C
PR79-SB-112-AS-01	N	Phenanthrene	0.0220	0.100 L	0.100 J	+	mg/kg	C
PR79-SB-112-AS-01	N	Pyrene	0.0220	0.120 L	0.120 J	+	mg/kg	C
PR79-SB-112-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00210 JL	0.00210 J	-	mg/kg	C/TR
PR79-SB-112-BS-01	N	Fluoranthene	0.0190	0.0490 L	0.0490 J	+	mg/kg	C
PR79-SB-112-BS-01	N	Phenanthrene	0.0190	0.0340 L	0.0340 J	+	mg/kg	C
PR79-SB-112-BS-01	N	Pyrene	0.0190	0.0350 L	0.0350 J	+	mg/kg	C
PR79-SB-112-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0960	0.0480 UL	0.0480 UJ		mg/kg	C

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-113-AS-01	N	Fluoranthene	0.0220	0.0560 L	0.0560 J	+	mg/kg	C
PR79-SB-113-AS-01	N	Phenanthrene	0.0220	0.0370 L	0.0370 J	+	mg/kg	C
PR79-SB-113-AS-01	N	Pyrene	0.0220	0.0420 L	0.0420 J	+	mg/kg	C
PR79-SB-113-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00160 JL	0.00160 J	-	mg/kg	C/TR
PR79-SB-113-BS-01	N	Fluoranthene	0.0380	0.550 L	0.550 J	+	mg/kg	C
PR79-SB-113-BS-01	N	Phenanthrene	0.0190	0.390 L	0.390 J	+	mg/kg	C
PR79-SB-113-BS-01	N	Pyrene	0.0190	0.340 L	0.340 J	+	mg/kg	D3/C
PR79-SB-113-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0950	0.00110 JL	0.00110 J	-	mg/kg	C/TR
PR79-SB-114-BS-01	N	Fluoranthene	0.0200	0.00290 JL	0.00290 J	+	mg/kg	C/TR
PR79-SB-114-BS-01	N	Phenanthrene	0.0200	0.00210 JL	0.00210 J	+	mg/kg	C/TR
PR79-SB-114-BS-01	N	Pyrene	0.0200	0.00240 JL	0.00240 J	+	mg/kg	C/TR
PR79-SB-114-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0990	0.00160 JL	0.00160 J	-	mg/kg	C/TR
PR79-SB-115-BS-01	N	Fluoranthene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	Benzo(a)anthracene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0520 UL	0.0520 UJ		mg/kg	C
PR79-SB-116-BS-01	N	Fluoranthene	0.0200	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-SB-116-BS-01	N	Benzo(a)anthracene	0.0200	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-116-BS-01	N	Benzo(b)fluoranthene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-116-BS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-116-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-117-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0530 UL	0.0530 UJ		mg/kg	C
PR79-SB-117-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0570 UL	0.0570 UJ		mg/kg	C
PR79-SB-118-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 UL	0.0540 UJ		mg/kg	C/M
PR79-SB-118-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 UL	0.0530 UJ		mg/kg	C
PR79-SB-119-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 UL	0.0560 UJ		mg/kg	C
PR79-SB-119-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 UL	0.0530 UJ		mg/kg	C/H2
PR79-SB-120-AS-01	N	Fluoranthene	0.0200	0.00860 JL	0.00860 J	-	mg/kg	C/TR
PR79-SB-120-AS-01	N	Benzo(a)anthracene	0.0200	0.0110 JL	0.0110 J	-	mg/kg	C/TR
PR79-SB-120-AS-01	N	Benzo(b)fluoranthene	0.0200	0.0110 JL	0.0110 J	-	mg/kg	C/TR
PR79-SB-120-AS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-120-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00110 JL	0.00110 J	-	mg/kg	C/TR
PR79-SB-FD03-01	FD	Fluoranthene	0.0200	0.0750 L	0.0750 J	+	mg/kg	C
PR79-SB-FD03-01	FD	Phenanthrene	0.0200	0.0520 L	0.0520 J	+	mg/kg	C
PR79-SB-FD03-01	FD	Pyrene	0.0200	0.0500 L	0.0500 J	+	mg/kg	C
PR79-SB-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.100	0.0510 UL	0.0510 UJ		mg/kg	C
PR79-SB-FD04-01	FD	Fluoranthene	0.0410	0.750 L	0.750 J	+	mg/kg	C
PR79-SB-FD04-01	FD	Phenanthrene	0.0410	0.620 L	0.620 J	+	mg/kg	C
PR79-SB-FD04-01	FD	Pyrene	0.0410	0.630 L	0.630 J	+	mg/kg	D3/C

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-FD04-01	FD	1,4-Dioxane (p-Dioxane)	0.100	0.00230 JL	0.00230 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-AS-01 (SD)/ WG277641-4	1,4-Dioxane (p-Dioxane)	29.66	30 - 150	10 - 150	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 UL	0.0540 UJ		mg/kg	C/M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
SN3616-6/ SN3616-6		21.00	< 14	< 14	days	J/UJ	H2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-119-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 UL	0.0530 UJ		mg/kg	C/H2
PR79-SB-119-BS-01	N	2-Methylnaphthalene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Acenaphthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Acenaphthylene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Anthracene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(a)anthracene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(a)pyrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(g,h,i)perylene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(k)fluoranthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Chrysene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Fluoranthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Fluorene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Indeno(1,2,3-c,d)pyrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Naphthalene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Pentachlorophenol	0.110	0.0530 U	0.0530 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Phenanthrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Pyrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
fake sample (STD)	Pyrene-d10		31 - 128	10 - 128		None/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-119-BS-01 (N)/ SN3616-6	2,4-Dibromophenol	11.20	20 - 116	10 - 116	percent	J/UJ	I	
PR79-SB-119-BS-01 (N)/ SN3616-6	2-Methylnaphthalene-d10	8.750	19 - 94	10 - 94	percent	J/X	I	
PR79-SB-119-BS-01 (N)/ SN3616-6	Fluorene-d10	9.550	20 - 96	10 - 96	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C SW1312, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-111-BS-01 (SD)/ SN3553-007P	Lead	85.50	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-111-BS-01 (MS)/ SN3553-007S	Lead	82.00	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-111-BS-01 (MS)/ SN3553-007S	Thallium	83.50	85 - 114	30 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ SN3616-010P	Lead	74.35	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ SN3616-010P	Thallium	80.00	85 - 114	30 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ SN3616-010S	Lead	83.35	86 - 113	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-111-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M
PR79-SB-118-AS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-118-BS-01	N	Lead	25.0	6.30 JN	6.30 J	-	ug/l	M/TR
PR79-SB-118-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C SW1312, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-111-AS-01 (N)/ SN3553-6		27.92	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-111-BS-01 (N)/ SN3553-007P		27.91	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-111-BS-01 (N)/ SN3553-007S		27.91	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-111-BS-01 (N)/ SN3553-7		27.91	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-112-AS-01 (N)/ SN3552-11		28.75	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-112-BS-01 (N)/ SN3552-12		32.76	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-113-AS-01 (N)/ SN3552-7		28.89	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-113-BS-01 (N)/ SN3552-8		28.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-114-BS-01 (N)/ SN3553-5		27.96	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-115-BS-01 (N)/ SN3681-3		33.89	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-116-BS-01 (N)/ SN3681-4		26.96	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-117-AS-01 (N)/ SN3616-7		24.83	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-117-BS-01 (N)/ SN3616-8		28.84	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-118-AS-01 (N)/ SN3616-9		28.91	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-118-BS-01 (N)/ SN3616-10		28.90	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-119-AS-01 (N)/ SN3616-11		28.93	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-119-BS-01 (N)/ SN3616-12		28.92	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-120-AS-01 (N)/ SN3762-2		24.91	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-FD03-01 (FD)/ SN3552-9		28.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-FD04-01 (FD)/ SN3552-10		28.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-113-AS-01 (N)/ SN3552-3	Magnesium	54.84	< 50	< 50	rpd	J/None	D3	
PR79-SB-113-AS-01 (N)/ SN3552-3	Potassium	61.02	< 50	< 50	rpd	J/None	D3	
PR79-SB-113-AS-01 (N)/ SN3552-3	Barium	68.55	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-113-AS-01	N	Barium	0.360	65.1	65.1 J		mg/kg	D3
PR79-SB-113-AS-01	N	Magnesium	7.10	3560	3560 J		mg/kg	D3
PR79-SB-113-AS-01	N	Potassium	71.0	2380	2380 J		mg/kg	D3
PR79-SB-FD03-01	FD	Barium	0.470	133	133 J		mg/kg	D3
PR79-SB-FD03-01	FD	Magnesium	9.50	6250	6250 J		mg/kg	D3
PR79-SB-FD03-01	FD	Potassium	95.0	4470	4470 J		mg/kg	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Chromium	0.06500	< 0.026	< 1	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Magnesium	1.400	< 0.68	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Iron	1.800	< 1.4	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Potassium	14.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Sodium	3.900	< 1.5	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Nickel	0.05000	< 0.044	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Chromium	0.07400	< 0.026	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Magnesium	1.500	< 0.68	< 10	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Potassium	20.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Sodium	6.900	< 1.5	< 100	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Zinc	0.2900	< 0.17	< 2	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Aluminum	1.500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Magnesium	1.900	< 0.68	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Iron	1.900	< 1.4	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Potassium	40.70	< 2.9	< 100	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Sodium	8.900	< 1.5	< 100	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Chromium	0.04600	< 0.026	< 1	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Zinc	0.3500	< 0.17	< 2	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Aluminum	1.400	< 0.71	< 30	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Magnesium	1.600	< 0.68	< 10	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Iron	3.200	< 1.4	< 10	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Potassium	4.400	< 2.9	< 100	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Sodium	4.800	< 1.5	< 100	mg/kg	U/None	L	
PBSNE21ICS1 (LB)/ PBSNE21ICS1	Magnesium	1.200	< 0.68	< 10	mg/kg	U/None	L	

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE21ICS1 (LB)/ PBSNE21ICS1	Iron	1.600	< 1.4	< 10	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-112-AS-01	N	Sodium	92.0	90.9 J	92.0 U		mg/kg	L
PR79-SB-112-BS-01	N	Sodium	100	81.7 J	100 U		mg/kg	L
PR79-SB-117-AS-01	N	Sodium	71.0	53.1 J	71.0 U		mg/kg	L
PR79-SB-117-BS-01	N	Sodium	92.0	57.6 J	92.0 U		mg/kg	L
PR79-SB-118-AS-01	N	Sodium	88.0	48.0 J	88.0 U		mg/kg	L
PR79-SB-119-AS-01	N	Sodium	93.0	44.0 J	47.0 U		mg/kg	L
PR79-SB-120-AS-01	N	Sodium	99.0	30.0 J	50.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-AS-01 (MS)	Lead	78.30	86 - 113	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-118-AS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-118-BS-01	N	Lead	25.0	6.30 JN	6.30 J	-	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-AS-01 (SD)/ SN3616-003P	Iron	-202.4	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-118-AS-01 (SD)/ SN3616-003P	Aluminum	165.7	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-AS-01 (SD)/ SN3616-003P	Calcium	177.7	81 - 116	30 - 125	percent	J/None	M	
PR79-SB-118-AS-01 (SD)/ SN3616-003P	Magnesium	75.83	78 - 115	30 - 125	percent	J/UJ	M	
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Iron	1144	81 - 118	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Potassium	122.4	81 - 116	30 - 125	percent	J/None	M	
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Manganese	140.3	84 - 114	30 - 125	percent	J/None	M	
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Magnesium	149.2	78 - 115	30 - 125	percent	J/None	M	
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Calcium	180.0	81 - 116	30 - 125	percent	J/None	M	
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Aluminum	555.6	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Iron	-333.3	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Aluminum	157.9	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Calcium	205.1	81 - 116	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Magnesium	64.10	78 - 115	30 - 125	percent	J/UJ	M	Spike amount Insignificant
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Potassium	64.17	81 - 116	30 - 125	percent	J/UJ	M	Spike amount Insignificant
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Iron	-1300	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Magnesium	-176.5	78 - 115	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Manganese	133.3	84 - 114	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Calcium	216.7	81 - 116	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Aluminum	736.8	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Potassium	80.21	81 - 116	30 - 125	percent	J/UJ	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-AS-01	N	Calcium	8.80	765 N	765 J	+	mg/kg	M
PR79-SB-118-AS-01	N	Potassium	88.0	1160 N	1160 J	+	mg/kg	M
PR79-SB-118-AS-01	N	Magnesium	8.80	1270 N	1270 J		mg/kg	M
PR79-SB-118-AS-01	N	Manganese	0.440	128 N	128 J	+	mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Magnesium	25.39	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-BS-01	N	Magnesium	9.60	4760 N*	4760 J		mg/kg	D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cadmium	0.02800	< 0.0076	< 0.1	mg/kg	U/None	L	
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cobalt	0.04600	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-115-BS-01	N	Cadmium	0.0910	0.0260 J	0.0910 U		mg/kg	L
PR79-SB-116-BS-01	N	Cadmium	0.100	0.0220 J	0.100 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-AS-01 (SD)/ SN3616-003P	Antimony	39.62	72 - 124	30 - 125	percent	J/UJ	M	
PR79-SB-118-AS-01 (MS)/ SN3616-003S	Antimony	40.38	72 - 124	30 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ SN3616-004P	Antimony	27.59	72 - 124	30 - 125	percent	J/X	M	
PR79-SB-118-BS-01 (MS)/ SN3616-004S	Antimony	26.88	72 - 124	30 - 125	percent	J/X	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-AS-01	N	Antimony	0.0880	0.0440 UN	0.0440 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Antimony	0.0960	0.0480 UN	0.0480 R		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SOBG-01 (EB)/ SN3762-3	Toluene	0.3900	< 0.27	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277634-1 (BS)/ WG277634-1	Bromomethane	160.0	53 - 143	10 - 143	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-BS-01 (MS)/ WG277929-7	1,2,3-Trichlorobenzene	30.95	66 - 130	10 - 130	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	1,2,4-Trichlorobenzene	30.95	67 - 129	10 - 129	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	1,2-Dichlorobenzene	47.62	78 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	n-Butylbenzene	50.00	70 - 128	10 - 128	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	p-Cymene (p-Isopropyltoluene)	52.38	73 - 127	10 - 127	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	1,3-Dichlorobenzene	52.38	77 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	sec-Butylbenzene	57.14	73 - 126	10 - 126	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	1,2,4-Trimethylbenzene	57.14	75 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	1,3,5-Trimethylbenzene	59.52	73 - 124	10 - 124	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	tert-Butylbenzene	59.52	73 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	n-Propylbenzene	61.90	73 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	Isopropylbenzene (Cumene)	64.29	68 - 134	10 - 134	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	o-Xylene	66.67	77 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	Ethylbenzene	69.05	76 - 122	10 - 122	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	m,p-Xylene	69.05	77 - 124	10 - 124	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	cis-1,2-Dichloroethene	71.43	77 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-118-BS-01 (MS)/ WG277929-7	Toluene	76.19	77 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	1,2,3-Trichlorobenzene	18.89	66 - 130	10 - 130	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	1,2,4-Trichlorobenzene	22.22	67 - 129	10 - 129	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	1,2-Dichlorobenzene	35.56	78 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	1,3-Dichlorobenzene	40.00	77 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	n-Butylbenzene	42.22	70 - 128	10 - 128	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	p-Cymene (p-Isopropyltoluene)	46.67	73 - 127	10 - 127	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	1,2,4-Trimethylbenzene	46.67	75 - 123	10 - 123	percent	J/UJ	M	

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-118-BS-01 (SD)/ WG277929-8	sec-Butylbenzene	48.89	73 - 126	10 - 126	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	1,3,5-Trimethylbenzene	51.11	73 - 124	10 - 124	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	n-Propylbenzene	51.11	73 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	tert-Butylbenzene	53.33	73 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	Isopropylbenzene (Cumene)	57.78	68 - 134	10 - 134	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	o-Xylene	57.78	77 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	4-Methyl-2-pentanone (MIBK)	60.00	65 - 135	10 - 135	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	Ethylbenzene	62.22	76 - 122	10 - 122	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	m,p-Xylene	62.22	77 - 124	10 - 124	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	Dibromochloromethane	71.11	74 - 126	10 - 126	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	Toluene	71.11	77 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-118-BS-01 (SD)/ WG277929-8	cis-1,2-Dichloroethene	75.56	77 - 123	10 - 123	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-BS-01	N	cis-1,2-Dichloroethene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2,3-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2,4-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2,4-Trimethylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,3,5-Trimethylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,3-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	4-Methyl-2-pentanone (MIBK)	0.0230	0.0110 UM	0.0110 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Dibromochloromethane	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-BS-01	N	Ethylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Isopropylbenzene (Cumene)	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	m,p-Xylene	0.00910	0.00460 UMM	0.00460 UJ		mg/kg	M
PR79-SB-118-BS-01	N	n-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	n-Propylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	o-Xylene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	p-Cymene (p-Isopropyltoluene)	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	sec-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	tert-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Toluene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-SO-01 (TB)/ SN3553-4	Methylene chloride	0.01500	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-111-AS-01 (N)/ SN3553-2		172.5	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-112-AS-01 (N)/ SN3552-5		192.3	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-113-AS-01 (N)/ SN3552-1		195.7	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-117-AS-01 (N)/ SN3616-1		94.12	< 24	< 48	hours	J/X	H2	Prep to Test Exceeds UCL
PR79-SB-118-AS-01 (N)/ SN3616-3		94.20	< 24	< 48	hours	J/X	H2	Prep to Test Exceeds UCL
PR79-SB-119-AS-01 (N)/ SN3616-5		100.3	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-120-AS-01 (N)/ SN3762-1		96.75	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-FD03-01 (FD)/ SN3552-3		195.6	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-AS-01	N	pH	0.100	6.60	6.60 J	-	ph units	H2
PR79-SB-112-AS-01	N	pH	0.100	7.00	7.00 J	-	ph units	H2
PR79-SB-113-AS-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2
PR79-SB-117-AS-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-SB-118-AS-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-SB-119-AS-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-SB-120-AS-01	N	pH	0.100	6.00	6.00 J	-	ph units	H2
PR79-SB-FD03-01	FD	pH	0.100	6.60	6.60 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-113-AS-01 (N)/ SN3552-3	Total Organic Carbon	3900	< 580	< 580	ug/g	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-113-AS-01	N	Total Organic Carbon	580	3900	3900 J		ug/g	D3
PR79-SB-FD03-01	FD	Total Organic Carbon	590	440 U	440 UJ		ug/g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-120-AS-01 (MS)/ WG278242-3	Total Organic Carbon	127.0	80 - 120	30 - 120	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-120-AS-01	N	Total Organic Carbon	470	8600	8600 J	+	ug/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM	Extraction Method: SW3550							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-AS-01	N	Fluoranthene	0.0210	0.0170 JL	0.0170 J	+	mg/kg	C/TR
PR79-SB-111-AS-01	N	Phenanthrene	0.0210	0.00810 JL	0.00810 J	+	mg/kg	C/TR
PR79-SB-111-AS-01	N	Pyrene	0.0210	0.0130 JL	0.0130 J	+	mg/kg	C/TR
PR79-SB-111-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00170 JL	0.00170 J	-	mg/kg	C/TR
PR79-SB-111-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0920	0.00120 JL	0.00120 J	-	mg/kg	C/TR
PR79-SB-112-AS-01	N	Fluoranthene	0.0220	0.170 L	0.170 J	+	mg/kg	C
PR79-SB-112-AS-01	N	Phenanthrene	0.0220	0.100 L	0.100 J	+	mg/kg	C
PR79-SB-112-AS-01	N	Pyrene	0.0220	0.120 L	0.120 J	+	mg/kg	C
PR79-SB-112-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00210 JL	0.00210 J	-	mg/kg	C/TR
PR79-SB-112-BS-01	N	Fluoranthene	0.0190	0.0490 L	0.0490 J	+	mg/kg	C
PR79-SB-112-BS-01	N	Phenanthrene	0.0190	0.0340 L	0.0340 J	+	mg/kg	C
PR79-SB-112-BS-01	N	Pyrene	0.0190	0.0350 L	0.0350 J	+	mg/kg	C
PR79-SB-112-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0960	0.0480 UL	0.0480 UJ		mg/kg	C
PR79-SB-113-AS-01	N	Fluoranthene	0.0220	0.0560 L	0.0560 J	+	mg/kg	C
PR79-SB-113-AS-01	N	Phenanthrene	0.0220	0.0370 L	0.0370 J	+	mg/kg	C
PR79-SB-113-AS-01	N	Pyrene	0.0220	0.0420 L	0.0420 J	+	mg/kg	C
PR79-SB-113-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00160 JL	0.00160 J	-	mg/kg	C/TR
PR79-SB-113-BS-01	N	Fluoranthene	0.0380	0.550 L	0.550 J	+	mg/kg	C
PR79-SB-113-BS-01	N	Phenanthrene	0.0190	0.390 L	0.390 J	+	mg/kg	C
PR79-SB-113-BS-01	N	Pyrene	0.0190	0.340 L	0.340 J	+	mg/kg	D3/C
PR79-SB-113-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0950	0.00110 JL	0.00110 J	-	mg/kg	C/TR
PR79-SB-114-BS-01	N	Fluoranthene	0.0200	0.00290 JL	0.00290 J	+	mg/kg	C/TR
PR79-SB-114-BS-01	N	Phenanthrene	0.0200	0.00210 JL	0.00210 J	+	mg/kg	C/TR
PR79-SB-114-BS-01	N	Pyrene	0.0200	0.00240 JL	0.00240 J	+	mg/kg	C/TR
PR79-SB-114-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0990	0.00160 JL	0.00160 J	-	mg/kg	C/TR
PR79-SB-115-BS-01	N	Fluoranthene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	Benzo(a)anthracene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-115-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0520 UL	0.0520 UJ		mg/kg	C
PR79-SB-116-BS-01	N	Fluoranthene	0.0200	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-SB-116-BS-01	N	Chrysene	0.0200	0.00370 J	0.0100 U		mg/kg	L
PR79-SB-116-BS-01	N	Pyrene	0.0200	0.00440 J	0.0100 U		mg/kg	L
PR79-SB-116-BS-01	N	Benzo(a)anthracene	0.0200	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-116-BS-01	N	Benzo(b)fluoranthene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-116-BS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-116-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-117-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0530 UL	0.0530 UJ		mg/kg	C
PR79-SB-117-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0570 UL	0.0570 UJ		mg/kg	C
PR79-SB-118-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 UL	0.0540 UJ		mg/kg	C/M

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 UL	0.0530 UJ		mg/kg	C
PR79-SB-119-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 UL	0.0560 UJ		mg/kg	C
PR79-SB-119-BS-01	N	2-Methylnaphthalene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Acenaphthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Acenaphthylene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Anthracene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(a)anthracene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(a)pyrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(g,h,i)perylene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Benzo(k)fluoranthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Chrysene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Fluoranthene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Fluorene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Indeno(1,2,3-c,d)pyrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Naphthalene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Pentachlorophenol	0.110	0.0530 U	0.0530 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Phenanthrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	Pyrene	0.0210	0.0110 U	0.0110 UJ		mg/kg	H2
PR79-SB-119-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 UL	0.0530 UJ		mg/kg	C/H2
PR79-SB-120-AS-01	N	Fluoranthene	0.0200	0.00860 JL	0.00860 J	-	mg/kg	C/TR
PR79-SB-120-AS-01	N	Benzo(a)anthracene	0.0200	0.0110 JL	0.0110 J	-	mg/kg	C/TR
PR79-SB-120-AS-01	N	Benzo(b)fluoranthene	0.0200	0.0110 JL	0.0110 J	-	mg/kg	C/TR
PR79-SB-120-AS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-120-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00110 JL	0.00110 J	-	mg/kg	C/TR
PR79-SB-FD03-01	FD	Fluoranthene	0.0200	0.0750 L	0.0750 J	+	mg/kg	C
PR79-SB-FD03-01	FD	Phenanthrene	0.0200	0.0520 L	0.0520 J	+	mg/kg	C
PR79-SB-FD03-01	FD	Pyrene	0.0200	0.0500 L	0.0500 J	+	mg/kg	C
PR79-SB-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.100	0.0510 UL	0.0510 UJ		mg/kg	C
PR79-SB-FD04-01	FD	Fluoranthene	0.0410	0.750 L	0.750 J	+	mg/kg	C
PR79-SB-FD04-01	FD	Phenanthrene	0.0410	0.620 L	0.620 J	+	mg/kg	C
PR79-SB-FD04-01	FD	Pyrene	0.0410	0.630 L	0.630 J	+	mg/kg	D3/C
PR79-SB-FD04-01	FD	1,4-Dioxane (p-Dioxane)	0.100	0.00230 JL	0.00230 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-112-AS-01	N	Sodium	92.0	90.9 J	92.0 U		mg/kg	L
PR79-SB-112-BS-01	N	Sodium	100	81.7 J	100 U		mg/kg	L
PR79-SB-113-AS-01	N	Barium	0.360	65.1	65.1 J		mg/kg	D3
PR79-SB-113-AS-01	N	Magnesium	7.10	3560	3560 J		mg/kg	D3
PR79-SB-113-AS-01	N	Potassium	71.0	2380	2380 J		mg/kg	D3
PR79-SB-117-AS-01	N	Sodium	71.0	53.1 J	71.0 U		mg/kg	L

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-117-BS-01	N	Sodium	92.0	57.6 J	92.0 U		mg/kg	L
PR79-SB-118-AS-01	N	Sodium	88.0	48.0 J	88.0 U		mg/kg	L
PR79-SB-118-AS-01	N	Calcium	8.80	765 N	765 J	+	mg/kg	M
PR79-SB-118-AS-01	N	Potassium	88.0	1160 N	1160 J	+	mg/kg	M
PR79-SB-118-AS-01	N	Magnesium	8.80	1270 N	1270 J		mg/kg	M
PR79-SB-118-AS-01	N	Manganese	0.440	128 N	128 J	+	mg/kg	M
PR79-SB-118-BS-01	N	Magnesium	9.60	4760 N*	4760 J		mg/kg	D
PR79-SB-119-AS-01	N	Sodium	93.0	44.0 J	47.0 U		mg/kg	L
PR79-SB-120-AS-01	N	Sodium	99.0	30.0 J	50.0 U		mg/kg	L
PR79-SB-FD03-01	FD	Barium	0.470	133	133 J		mg/kg	D3
PR79-SB-FD03-01	FD	Magnesium	9.50	6250	6250 J		mg/kg	D3
PR79-SB-FD03-01	FD	Potassium	95.0	4470	4470 J		mg/kg	D3

Test Method: SW6010C Extraction Method: SW3010A Leach: SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-111-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M
PR79-SB-118-AS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-118-BS-01	N	Lead	25.0	6.30 JN	6.30 J	-	ug/l	M/TR
PR79-SB-118-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-115-BS-01	N	Cadmium	0.0910	0.0260 J	0.0910 U		mg/kg	L
PR79-SB-116-BS-01	N	Cadmium	0.100	0.0220 J	0.100 U		mg/kg	L
PR79-SB-118-AS-01	N	Antimony	0.0880	0.0440 UN	0.0440 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Antimony	0.0960	0.0480 UN	0.0480 R		mg/kg	M

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-BS-01	N	cis-1,2-Dichloroethene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2,3-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2,4-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2,4-Trimethylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,2-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,3,5-Trimethylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	1,3-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	4-Methyl-2-pentanone (MIBK)	0.0230	0.0110 UM	0.0110 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Dibromochloromethane	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-118-BS-01	N	Ethylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Isopropylbenzene (Cumene)	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	m,p-Xylene	0.00910	0.00460 UMM	0.00460 UJ		mg/kg	M
PR79-SB-118-BS-01	N	n-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	n-Propylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	o-Xylene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	p-Cymene (p-Isopropyltoluene)	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	sec-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	tert-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-SB-118-BS-01	N	Toluene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-111-AS-01	N	pH	0.100	6.60	6.60 J	-	ph units	H2
PR79-SB-112-AS-01	N	pH	0.100	7.00	7.00 J	-	ph units	H2
PR79-SB-113-AS-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2
PR79-SB-117-AS-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-SB-118-AS-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-SB-119-AS-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-SB-120-AS-01	N	pH	0.100	6.00	6.00 J	-	ph units	H2
PR79-SB-FD03-01	FD	pH	0.100	6.60	6.60 J	-	ph units	H2

Test Method: SW9060A Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-113-AS-01	N	Total Organic Carbon	580	3900	3900 J		ug/g	D3
PR79-SB-120-AS-01	N	Total Organic Carbon	470	8600	8600 J	+	ug/g	M
PR79-SB-FD03-01	FD	Total Organic Carbon	590	440 U	440 UJ		ug/g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-111-BS-01	N	Acenaphthene	0.0180	0.00920 U	0.00920 U	0.00920	
PR79-SB-119-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 UL	0.0530 X	0.0530 UJ	C/H2
PR79-SB-119-BS-01	N	2-Methylnaphthalene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Acenaphthene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Acenaphthylene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Anthracene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Benzo(a)anthracene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Benzo(a)pyrene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Benzo(g,h,i)perylene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Benzo(k)fluoranthene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Chrysene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Fluoranthene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Fluorene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Indeno(1,2,3-c,d)pyrene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Naphthalene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Pentachlorophenol	0.110	0.0530 U	0.0530 UJ	0.0530 UJ	H2
PR79-SB-119-BS-01	N	Phenanthrene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2
PR79-SB-119-BS-01	N	Pyrene	0.0210	0.0110 U	0.0110 X	0.0110 UJ	H2

Modified Qualifiers for test method SW6010C SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-111-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-111-AS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-111-BS-01	N	Lead	25.0	20.0 UN	20.0 X	20.0 UJ	M
PR79-SB-111-BS-01	N	Thallium	75.0	25.0 UN	25.0 X	25.0 UJ	M
PR79-SB-112-AS-01	N	Lead	25.0	6.10 J	6.10 J	6.10 J	TR
PR79-SB-112-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-113-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-113-AS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-113-BS-01	N	Chromium	50.0	21.6 J	21.6 J	21.6 J	TR
PR79-SB-113-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-113-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-114-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-114-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-115-BS-01	N	Chromium	50.0	20.0 U	20.0 X	20.0 U	
PR79-SB-115-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-115-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-116-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-116-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-117-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-117-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-117-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-118-AS-01	N	Lead	25.0	20.0 UN	20.0 X	20.0 UJ	M
PR79-SB-118-BS-01	N	Lead	25.0	6.30 JN	6.30 J	6.30 J	M/TR
PR79-SB-118-BS-01	N	Thallium	75.0	25.0 UN	25.0 X	25.0 UJ	M
PR79-SB-119-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-119-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-120-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-120-AS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-FD03-01	FD	Chromium	50.0	3.10 J	3.10 J	3.10 J	TR
PR79-SB-FD03-01	FD	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-FD03-01	FD	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-FD04-01	FD	Chromium	50.0	8.20 J	8.20 J	8.20 J	TR
PR79-SB-FD04-01	FD	Lead	25.0	5.70 J	5.70 J	5.70 J	TR
PR79-SB-FD04-01	FD	Thallium	75.0	25.0 U	25.0 X	25.0 U	

Modified Qualifiers for test method SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-118-BS-01	N	Antimony	0.0960	0.0480 UN	0.0480 X	0.0480 R	M

Modified Qualifiers for test method SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-FD03-01	FD	Total Organic Carbon	590	440 U	440 U	440 UJ	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D	MS RPD
D3	Field Duplicate RPD
H1	Test Hold Time
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2 degrees C.
Were holding times met?		•		Sample SN3616-6 was re-extracted and re-analyzed past holding time due to poor surrogate %Rs. Since the HT was not grossly exceeded (<2X HT), the results were reported from the re-extraction and qualified (J/UJ) due to holding time.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		Low surr %R for SN3616-6. Sample was re-extracted and re-analyzed past HT with acceptable surr %Rs. Results were reported from re-extraction, qualified for HT.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report; one sample required quals for chrysene and pyrene due to blank contamination in one blank.
Were target analytes in the field blank less than MDL?			•	none submitted for this analysis.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report; quals required.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report; qual required for 1,4-dioxane.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		see outlier report; qual required for pyrene in one FD pair.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of 2A validation: CCV high for chrysene, indeno(123cd)pyrene and/or pentachlorophenol - pos results for chrysene, indeno(123cd)pyrene in several samples would be biased high; no quals for ND results. CCV low for 14-Dioxane and high for dibenzo (ah)anthracene. Result for 14Dioxane in PR79-SB-119-BS-01 may be biased low. No qual for ND dibenzo(ah)anthracene result. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		One lab blank and LCS had surrogate recoveries outside DoD QSM acceptance criteria. Recoveries for associated samples within limits. One lab blank, LCS, and one field sample had low responses for internal standards that exceeded DoD QSM acceptance limits. Re-extracted outside HT. Original field sample results reported. CCVs outside limits; additional consecutive CCVs not analyzed.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temps 0.3, 1.2, 0.2 degrees C.
Were holding times met?	•			See outlier report; sampling to leaching HT noted as exceeded but they were not. SPLP extraction was within 180 days of collection. Original extraction performed 5/18/2020, SPLP samples taken off hold on 6/2/2020 and SPLP prep performed on 6/17/2020. Qualifications to SPLP results based on HT (J/X) were manually removed.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report; blank qualifications for sodium.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report; qualifications required.
Was the MS/MSD RPD within project acceptance limits?		•		See outlier report; qualifications required.
Were the post spike recoveries within project acceptance limits?	•			Post-digest spike recoveries for analytes that failed criteria in the MS/MSD analysis met acceptance limits.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		See outlier report; qualifications required for barium, magnesium, and potassium in one FD sample.
Were QAPP specified laboratory PQLs achieved?		•		2 analytes in 2 samples outside of compliance.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			cooler temps 0.3, 1.2, 0.2 degrees C.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report; cadmium and cobalt detected in one blank. Qualifications required for two samples.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report; antimony non-detect result rejected in one sample due to low % MS/SD recovery.
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		Two analytes in two samples had PQLs outside acceptance criteria.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			See outlier report; antimony non-detect result rejected in one sample due to low % MS/MSD recovery.

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temps 0.3, 1.2, 0.2 degrees C.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?		•		MS/MSD recoveries met acceptance limits; no action.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		Mercury PQLs outside acceptance limits in 7 samples.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			Cooler temps 0.3, 1.2, 0.2 degrees C.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		Surrogate 1,2-DCA-d4 %R high in sample PR79 -SB-116-BS-01 not noted in ourtlier report. Sample results for associated compounds are all non-detect. No action.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		Toluene was detected in EB-03-SOBG-01; no qualification - aqueous EB results are not applied to solid field sample results. Methylene chloride was detected in TB-01-SO-01. Sample results for this compound in associated samples all non-detect; no qualifications.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		See outlier report; high %R for bromomethane. Compound is non-detect in all associated samples; no qualifications.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report; several non-detect results were qualified due to low % recoveries.
Was the MS/MSD RPD within project acceptance limits?		•		RPDs > 20% for 3 compounds, which were not detected in the sample. No qualification.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of 2A validation: ICV low for ClMethane: assoc results in SB3553-1, -3, -4, SN3552-6 may be biased low. ICV high for ClEthane and carbon disulfide: assoc results ND. CCV high for BrMethane - assoc results ND. CCV high for acetone - results for acetone in SN3552-2, SN3681-1, SN3681-2, SN3616-2, SN3616-4, SN3616-6, SN3552-4 may be biased high. CCV high for acetone, 2-butanone, 4-methyl-2-pentanone: assoc results ND.
Were DoD QSM corrective actions followed if deviations were noted?		•		CCV and ICV issues noted in case narrative. Additional consecutive acceptable CCVs should have been analyzed. Sample analysis should not have continued if ICV did not meet criteria.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		pH measured after 24 hrs from sampling; results estimated.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		%R high in one MS/MSD pair. Positive result estimated in parent sample PR79-SB-120-AS-01.
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		See outlier report; result estimated in parent sample. ND result estimated (UJ) in PR79-SB-FD03-01 using professional judgement due to large difference between ND result and detected value.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3300

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3300
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-026-PW-01	SN3300-5		Field Sample/N	X		X	X		X		X			X		
PR79-WT-026-PW-01-F	SN3300-6		Field Sample/N					X		X		X				
PR79-WT-027-PW-01	SN3300-11		Field Sample/N	X		X	X		X		X			X		
PR79-WT-027-PW-01-F	SN3300-12		Field Sample/N					X		X		X				
PR79-WT-028-PW-01	SN3300-17		Field Sample/N	X		X	X		X		X			X		
PR79-WT-028-PW-01-F	SN3300-18		Field Sample/N					X		X		X				
PR79-WT-026-SD-01	SN3300-3	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-026-SD-01	SN3300-4	Solid	Field Sample/N		X		X									
PR79-WT-027-SD-01	SN3300-10	Solid	Field Sample/N		X		X									
PR79-WT-027-SD-01	SN3300-9	Solid	Field Sample/N			X	X		X				X		X	X
PR79-WT-028-SD-01	SN3300-15	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-028-SD-01	SN3300-16	Solid	Field Sample/N		X		X									
TB-03-SDBG-01	SN3300-19	Solid	Trip Blank/TB											X		
PR79-WT-026-SW-01	SN3300-1	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-026-SW-01-F	SN3300-2	Water	Field Sample/N					X		X		X				
PR79-WT-027-SW-01	SN3300-7	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-027-SW-01-F	SN3300-8	Water	Field Sample/N					X		X		X				
PR79-WT-028-SW-01	SN3300-13	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-028-SW-01-F	SN3300-14	Water	Field Sample/N					X		X		X				
TB-03-PWBG-01	SN3300-20	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-026-PW-01	SN3300-5		Field Sample/N	X
PR79-WT-026-PW-01-F	SN3300-6		Field Sample/N	
PR79-WT-027-PW-01	SN3300-11		Field Sample/N	X
PR79-WT-027-PW-01-F	SN3300-12		Field Sample/N	
PR79-WT-028-PW-01	SN3300-17		Field Sample/N	X
PR79-WT-028-PW-01-F	SN3300-18		Field Sample/N	
PR79-WT-026-SD-01	SN3300-3	Solid	Field Sample/N	
PR79-WT-026-SD-01	SN3300-4	Solid	Field Sample/N	
PR79-WT-027-SD-01	SN3300-10	Solid	Field Sample/N	
PR79-WT-027-SD-01	SN3300-9	Solid	Field Sample/N	
PR79-WT-028-SD-01	SN3300-15	Solid	Field Sample/N	
PR79-WT-028-SD-01	SN3300-16	Solid	Field Sample/N	
TB-03-SDBG-01	SN3300-19	Solid	Trip Blank/TB	
PR79-WT-026-SW-01	SN3300-1	Water	Field Sample/N	X
PR79-WT-026-SW-01-F	SN3300-2	Water	Field Sample/N	
PR79-WT-027-SW-01	SN3300-7	Water	Field Sample/N	X
PR79-WT-027-SW-01-F	SN3300-8	Water	Field Sample/N	
PR79-WT-028-SW-01	SN3300-13	Water	Field Sample/N	X
PR79-WT-028-SW-01-F	SN3300-14	Water	Field Sample/N	
TB-03-PWBG-01	SN3300-20	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3300. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Extracted Internal Standard

Lab Blank

LCS Recovery

LCS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 183 results (19.24%) out of the 951 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Stage 2A all parameters; see revised COC and email in data package regarding sample IDs/tests.
Sample PR79-WT-027-SD-01 (SN3300-009) reported in SN3300_RE for VOC 8260.

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method AVS, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	Sulfide	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Sulfide	0.600	0.460 U	0.460 UJ		umoles/g	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277405-8 (IV)	Dibenz (a,h)anthracene	79.39	80 - 120	50 - 150	p	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-PW-01	N	Dibenz(a,h)anthracene	0.200	0.0990 U	0.0990 UJ		ug/l	V1
PR79-WT-026-SW-01	N	Dibenz(a,h)anthracene	0.200	0.0980 U	0.0980 UJ		ug/l	V1
PR79-WT-027-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-WT-027-SW-01	N	Dibenz(a,h)anthracene	0.200	0.100 U	0.100 UJ		ug/l	V1
PR79-WT-028-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-WT-028-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277405-8 ICV (IV)	Dibenz (a,h)anthracene	79.39	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	Dibenz(a,h)anthracene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I/V1
PR79-WT-027-SD-01	N	Dibenz(a,h)anthracene	0.110	0.0150 J	0.0150 J		mg/kg	TR/Z8/V1
PR79-WT-028-SD-01	N	Dibenz(a,h)anthracene	0.0190	0.00960 U	0.00960 UJ		mg/kg	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG276804-2 (BS)/ WG276804-2	1,4-Dioxane (p-Dioxane)	28.49	30 - 150	10 - 150	percent	J/UJ	C	
WG277641-2 (BS)/ WG277641-2	1,4-Dioxane (p-Dioxane)	27.74	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	1,4-Dioxane (p-Dioxane)	0.210	0.00470 JL	0.00470 J	-	mg/kg	C/I/TR
PR79-WT-027-SD-01	N	1,4-Dioxane (p-Dioxane)	0.570	0.0100 JL	0.0100 J		mg/kg	C/TR/Z8
PR79-WT-028-SD-01	N	1,4-Dioxane (p-Dioxane)	0.0960	0.00120 JL	0.00120 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	1,4-Dioxane (p-Dioxane)	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	1,4-Dioxane (p-Dioxane)	0.570	0.0100 JL	0.0100 J		mg/kg	C/TR/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-026-SD-01 (N)/ SN3300-3	Pyrene-d10	24.40	31 - 128	10 - 128	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	1,4-Dioxane (p-Dioxane)	0.210	0.00470 JL	0.00470 J	-	mg/kg	C/I/TR
PR79-WT-026-SD-01	N	2-Methylnaphthalene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Acenaphthene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Acenaphthylene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Anthracene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Benzo(a)anthracene	0.0430	0.00690 J	0.00690 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(a)pyrene	0.0430	0.00950 J	0.00950 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(b)fluoranthene	0.0430	0.0180 J	0.0180 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(g,h,i)perylene	0.0430	0.0120 J	0.0120 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(k)fluoranthene	0.0430	0.00960 J	0.00960 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Chrysene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Dibenz(a,h)anthracene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I/V1
PR79-WT-026-SD-01	N	Fluoranthene	0.0430	0.00970 J	0.00970 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Fluorene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0430	0.00860 J	0.00860 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Naphthalene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Pentachlorophenol	0.210	0.110 U	0.110 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Phenanthrene	0.0430	0.00640 J	0.00640 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Pyrene	0.0430	0.0130 J	0.0130 J	-	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS1 (LB)/ PBSNE08ICS1	Zinc	0.001770	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Barium	0.02500	< 0.025	< 0.5	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Chromium	0.05300	< 0.026	< 1	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Nickel	0.08600	< 0.044	< 1	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Lead	0.08800	< 0.087	< 0.5	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Aluminum	1.200	< 0.71	< 30	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Magnesium	2.400	< 0.68	< 10	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Sodium	3.200	< 1.5	< 100	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Calcium	4.400	< 1.8	< 10	mg/kg	U/None	L	
PBSNE04ICS1 (LB)/ PBSNE04ICS1	Potassium	8.600	< 2.9	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	Sodium	240	98.6 J	120 U		mg/kg	L
PR79-WT-027-SD-01	N	Nickel	5.60	5.54 J	5.60 UJ		mg/kg	L/Z8
PR79-WT-027-SD-01	N	Sodium	560	203 J	280 UJ		mg/kg	L/Z8
PR79-WT-028-SD-01	N	Sodium	69.0	40.6 J	69.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	Aluminum	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Aluminum	170	13000	13000 J		mg/kg	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE04ICW1 (LB)/ PBWNE04ICW1	Potassium	100.0	< 41	< 1000	ug/l	U/None	L	
PBWNE04ICW1 (LB)/ PBWNE04ICW1	Magnesium	12.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE04ICW1 (LB)/ PBWNE04ICW1	Aluminum	22.00	< 15	< 300	ug/l	U/None	L	
PBWNE04ICW1 (LB)/ PBWNE04ICW1	Iron	5.600	< 5.4	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SW-01	N	Aluminum	300	60.0 J	100 U		ug/l	L
PR79-WT-026-SW-01	N	Potassium	1000	300 J	500 U		ug/l	L
PR79-WT-027-PW-01	N	Potassium	1000	280 J	500 U		ug/l	L
PR79-WT-027-SW-01	N	Aluminum	300	36.0 J	100 U		ug/l	L
PR79-WT-027-SW-01	N	Iron	100	32.0 J	80.0 U		ug/l	L
PR79-WT-027-SW-01	N	Potassium	1000	484 J	500 U		ug/l	L
PR79-WT-028-PW-01	N	Potassium	1000	476 J	500 U		ug/l	L
PR79-WT-028-SW-01	N	Aluminum	300	76.0 J	100 U		ug/l	L
PR79-WT-028-SW-01	N	Potassium	1000	410 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	Antimony	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Antimony	0.560	0.260 J	0.260 J		mg/kg	TR/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE04IMW1 (LB)/ PBWNE04IMW1	Cadmium	0.1000	< 0.03	< 1	ug/l	U/None	L	
PBWNE04IMW1 (LB)/ PBWNE04IMW1	Beryllium	0.1200	< 0.034	< 1	ug/l	U/None	L	
PBWNE04IMW1 (LB)/ PBWNE04IMW1	Antimony	0.1400	< 0.054	< 1	ug/l	U/None	L	
PBWNE04IMW1 (LB)/ PBWNE04IMW1	Cobalt	0.1500	< 0.061	< 1	ug/l	U/None	L	
PBWNE04IMW1 (LB)/ PBWNE04IMW1	Lead	0.2100	< 0.074	< 1	ug/l	U/None	L	
PBWNE04IMW1 (LB)/ PBWNE04IMW1	Selenium	0.2600	< 0.19	< 5	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-PW-01	N	Antimony	1.00	0.0910 J	0.500 U		ug/l	L
PR79-WT-026-PW-01	N	Beryllium	1.00	0.250 J	1.00 U		ug/l	L
PR79-WT-026-PW-01	N	Cadmium	1.00	0.0440 J	0.200 U		ug/l	L
PR79-WT-026-SW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-026-SW-01	N	Cadmium	1.00	0.0310 J	0.200 U		ug/l	L
PR79-WT-026-SW-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-WT-026-SW-01	N	Lead	1.00	0.160 J	0.500 U		ug/l	L
PR79-WT-027-PW-01	N	Beryllium	1.00	0.0900 J	0.200 U		ug/l	L
PR79-WT-027-PW-01	N	Cobalt	1.00	0.850 J	1.00 U		ug/l	L
PR79-WT-027-PW-01	N	Lead	1.00	0.300 J	0.500 U		ug/l	L
PR79-WT-027-SW-01	N	Beryllium	1.00	0.0350 J	0.200 U		ug/l	L
PR79-WT-027-SW-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-WT-027-SW-01	N	Lead	1.00	0.120 J	0.500 U		ug/l	L
PR79-WT-028-PW-01	N	Beryllium	1.00	0.170 J	0.200 U		ug/l	L
PR79-WT-028-PW-01	N	Cadmium	1.00	0.0540 J	0.200 U		ug/l	L
PR79-WT-028-PW-01	N	Cobalt	1.00	0.720 J	1.00 U		ug/l	L
PR79-WT-028-PW-01	N	Lead	1.00	0.510 J	1.00 U		ug/l	L
PR79-WT-028-SW-01	N	Beryllium	1.00	0.0810 J	0.200 U		ug/l	L
PR79-WT-028-SW-01	N	Cobalt	1.00	0.110 J	0.300 U		ug/l	L
PR79-WT-028-SW-01	N	Lead	1.00	0.110 J	0.500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	Mercury	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Mercury	0.180	0.130 J	0.130 J		mg/kg	TR/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	1,1,1-Trichloroethane	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-026-SD-01 (N)/ SN3300-3	Dibromofluoromethane	125.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-026-SD-01 (N)/ SN3300-3	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	41.90	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-028-SD-01 (N)/ SN3300-15	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	67.60	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	1,1,1-Trichloroethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,1-Dichloroethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,1-Dichloroethene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2,3-Trichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2,4-Trichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2,4-Trimethylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2-Dichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,3,5-Trimethylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,3-Dichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	2-Butanone (MEK)	0.0800	0.0220 J	0.0220 J		mg/kg	I/TR
PR79-WT-026-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0800	0.0400 U	0.0400 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Acetone	0.0800	0.180	0.180 J		mg/kg	I
PR79-WT-026-SD-01	N	Benzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Bromodichloromethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Bromomethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Carbon disulfide	0.0160	0.00320 J	0.00320 J		mg/kg	I/TR
PR79-WT-026-SD-01	N	Chloroethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Chloroform	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Chloromethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	cis-1,2-Dichloroethene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Dibromochloromethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Ethylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Isopropylbenzene (Cumene)	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	m,p-Xylene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Methylene chloride	0.0800	0.0400 U	0.0400 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	n-Butylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	n-Propylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	o-Xylene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	sec-Butylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	tert-Butyl alcohol	0.0800	0.0400 U	0.0400 UJ		mg/kg	I
PR79-WT-026-SD-01	N	tert-Butylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Toluene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	trans-1,2-Dichloroethene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Trichloroethene (TCE)	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Vinyl chloride	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,1-Dichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2,3-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2,4-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2,4-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,3,5-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,3-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	2-Butanone (MEK)	0.0220	0.0340	0.0340 J	-	mg/kg	I
PR79-WT-028-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Acetone	0.0220	0.0830	0.0830 J	-	mg/kg	I
PR79-WT-028-SD-01	N	Benzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Bromodichloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Bromomethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Carbon disulfide	0.00430	0.000930 J	0.000930 J	-	mg/kg	I/TR
PR79-WT-028-SD-01	N	Chloroethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Chloroform	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Chloromethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	cis-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Dibromochloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Ethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Isopropylbenzene (Cumene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	m,p-Xylene	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Methylene chloride	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-028-SD-01	N	n-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	n-Propylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	o-Xylene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-028-SD-01	N	sec-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	tert-Butyl alcohol	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-028-SD-01	N	tert-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Toluene	0.00430	0.00900	0.00900 J	-	mg/kg	I
PR79-WT-028-SD-01	N	trans-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Trichloroethene (TCE)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Vinyl chloride	0.00860	0.00430 U	0.00430 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-03-SDBG-01 (TB)/ SN3300-19	Methylene chloride	0.008700	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	pH	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	pH	0.100	5.60	5.60 J		ph units	H2/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-026-SD-01 (N)/ SN3300-3		49.42	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-027-SD-01 (N)/ SN3300-9		47.85	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-028-SD-01 (N)/ SN3300-15		45.58	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	pH	0.100	5.50	5.50 J	-	ph units	H2
PR79-WT-027-SD-01	N	pH	0.100	5.60	5.60 J		ph units	H2/Z8
PR79-WT-028-SD-01	N	pH	0.100	5.30	5.30 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01	Total Organic Carbon	16.60	30 - 100	10 - 100	percent	J/UJ	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Total Organic Carbon	5600	350000	350000 J		ug/g	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-03-PWBG-01 (TB)/ SN3300-20	Benzene	0.01200	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: AVS Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Sulfide	0.600	0.460 U	0.460 UJ		umoles/g	Z8

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-PW-01	N	Dibenz(a,h)anthracene	0.200	0.0990 U	0.0990 UJ		ug/l	V1
PR79-WT-026-SW-01	N	Dibenz(a,h)anthracene	0.200	0.0980 U	0.0980 UJ		ug/l	V1
PR79-WT-027-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-WT-027-SW-01	N	Dibenz(a,h)anthracene	0.200	0.100 U	0.100 UJ		ug/l	V1
PR79-WT-028-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-WT-028-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ		ug/l	V1

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	1,4-Dioxane (p-Dioxane)	0.210	0.00470 JL	0.00470 J	-	mg/kg	C/I/TR
PR79-WT-026-SD-01	N	2-Methylnaphthalene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Acenaphthene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Acenaphthylene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Anthracene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Benzo(a)anthracene	0.0430	0.00690 J	0.00690 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(a)pyrene	0.0430	0.00950 J	0.00950 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(b)fluoranthene	0.0430	0.0180 J	0.0180 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(g,h,i)perylene	0.0430	0.0120 J	0.0120 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Benzo(k)fluoranthene	0.0430	0.00960 J	0.00960 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Chrysene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Dibenz(a,h)anthracene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I/V1
PR79-WT-026-SD-01	N	Fluoranthene	0.0430	0.00970 J	0.00970 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Fluorene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0430	0.00860 J	0.00860 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Naphthalene	0.0430	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Pentachlorophenol	0.210	0.110 U	0.110 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Phenanthrene	0.0430	0.00640 J	0.00640 J	-	mg/kg	I/TR
PR79-WT-026-SD-01	N	Pyrene	0.0430	0.0130 J	0.0130 J	-	mg/kg	I/TR
PR79-WT-027-SD-01	N	1,4-Dioxane (p-Dioxane)	0.570	0.0100 JL	0.0100 J		mg/kg	C/TR/Z8
PR79-WT-027-SD-01	N	Dibenz(a,h)anthracene	0.110	0.0150 J	0.0150 J		mg/kg	TR/Z8/V1
PR79-WT-028-SD-01	N	Dibenz(a,h)anthracene	0.0190	0.00960 U	0.00960 UJ		mg/kg	V1
PR79-WT-028-SD-01	N	1,4-Dioxane (p-Dioxane)	0.0960	0.00120 JL	0.00120 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	Sodium	240	98.6 J	120 U		mg/kg	L
PR79-WT-027-SD-01	N	Aluminum	170	13000	13000 J		mg/kg	Z8

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Nickel	5.60	5.54 J	5.60 UJ		mg/kg	L/Z8
PR79-WT-027-SD-01	N	Sodium	560	203 J	280 UJ		mg/kg	L/Z8
PR79-WT-028-SD-01	N	Sodium	69.0	40.6 J	69.0 U		mg/kg	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SW-01	N	Aluminum	300	60.0 J	100 U		ug/l	L
PR79-WT-026-SW-01	N	Potassium	1000	300 J	500 U		ug/l	L
PR79-WT-027-PW-01	N	Potassium	1000	280 J	500 U		ug/l	L
PR79-WT-027-SW-01	N	Aluminum	300	36.0 J	100 U		ug/l	L
PR79-WT-027-SW-01	N	Iron	100	32.0 J	80.0 U		ug/l	L
PR79-WT-027-SW-01	N	Potassium	1000	484 J	500 U		ug/l	L
PR79-WT-028-PW-01	N	Potassium	1000	476 J	500 U		ug/l	L
PR79-WT-028-SW-01	N	Aluminum	300	76.0 J	100 U		ug/l	L
PR79-WT-028-SW-01	N	Potassium	1000	410 J	500 U		ug/l	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Antimony	0.560	0.260 J	0.260 J		mg/kg	TR/Z8

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-PW-01	N	Antimony	1.00	0.0910 J	0.500 U		ug/l	L
PR79-WT-026-PW-01	N	Beryllium	1.00	0.250 J	1.00 U		ug/l	L
PR79-WT-026-PW-01	N	Cadmium	1.00	0.0440 J	0.200 U		ug/l	L
PR79-WT-026-SW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-026-SW-01	N	Cadmium	1.00	0.0310 J	0.200 U		ug/l	L
PR79-WT-026-SW-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-WT-026-SW-01	N	Lead	1.00	0.160 J	0.500 U		ug/l	L
PR79-WT-027-PW-01	N	Beryllium	1.00	0.0900 J	0.200 U		ug/l	L
PR79-WT-027-PW-01	N	Cobalt	1.00	0.850 J	1.00 U		ug/l	L
PR79-WT-027-PW-01	N	Lead	1.00	0.300 J	0.500 U		ug/l	L
PR79-WT-027-SW-01	N	Beryllium	1.00	0.0350 J	0.200 U		ug/l	L
PR79-WT-027-SW-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L
PR79-WT-027-SW-01	N	Lead	1.00	0.120 J	0.500 U		ug/l	L
PR79-WT-028-PW-01	N	Beryllium	1.00	0.170 J	0.200 U		ug/l	L
PR79-WT-028-PW-01	N	Cadmium	1.00	0.0540 J	0.200 U		ug/l	L
PR79-WT-028-PW-01	N	Cobalt	1.00	0.720 J	1.00 U		ug/l	L
PR79-WT-028-PW-01	N	Lead	1.00	0.510 J	1.00 U		ug/l	L
PR79-WT-028-SW-01	N	Beryllium	1.00	0.0810 J	0.200 U		ug/l	L
PR79-WT-028-SW-01	N	Cobalt	1.00	0.110 J	0.300 U		ug/l	L
PR79-WT-028-SW-01	N	Lead	1.00	0.110 J	0.500 U		ug/l	L

Table of All Qualified Results

Test Method: SW7471B	Extraction Method: METHOD							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Mercury	0.180	0.130 J	0.130 J		mg/kg	TR/Z8

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	1,1,1-Trichloroethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,1-Dichloroethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,1-Dichloroethene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2,3-Trichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2,4-Trichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2,4-Trimethylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,2-Dichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,3,5-Trimethylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	1,3-Dichlorobenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	2-Butanone (MEK)	0.0800	0.0220 J	0.0220 J		mg/kg	I/TR
PR79-WT-026-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0800	0.0400 U	0.0400 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Acetone	0.0800	0.180	0.180 J		mg/kg	I
PR79-WT-026-SD-01	N	Benzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Bromodichloromethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Bromomethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Carbon disulfide	0.0160	0.00320 J	0.00320 J		mg/kg	I/TR
PR79-WT-026-SD-01	N	Chloroethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Chloroform	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Chloromethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	cis-1,2-Dichloroethene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Dibromochloromethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Ethylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Isopropylbenzene (Cumene)	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	m,p-Xylene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Methylene chloride	0.0800	0.0400 U	0.0400 UJ		mg/kg	I
PR79-WT-026-SD-01	N	n-Butylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	n-Propylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	o-Xylene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	sec-Butylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	tert-Butyl alcohol	0.0800	0.0400 U	0.0400 UJ		mg/kg	I
PR79-WT-026-SD-01	N	tert-Butylbenzene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Toluene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	trans-1,2-Dichloroethene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Trichloroethene (TCE)	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-026-SD-01	N	Vinyl chloride	0.0320	0.0160 U	0.0160 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-028-SD-01	N	1,1-Dichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2,3-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2,4-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2,4-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,2-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,3,5-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	1,3-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	2-Butanone (MEK)	0.0220	0.0340	0.0340 J	-	mg/kg	I
PR79-WT-028-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Acetone	0.0220	0.0830	0.0830 J	-	mg/kg	I
PR79-WT-028-SD-01	N	Benzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Bromodichloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Bromomethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Carbon disulfide	0.00430	0.000930 J	0.000930 J	-	mg/kg	I/TR
PR79-WT-028-SD-01	N	Chloroethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Chloroform	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Chloromethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	cis-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Dibromochloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Ethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Isopropylbenzene (Cumene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	m,p-Xylene	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Methylene chloride	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-028-SD-01	N	n-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	n-Propylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	o-Xylene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	sec-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	tert-Butyl alcohol	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-028-SD-01	N	tert-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Toluene	0.00430	0.00900	0.00900 J	-	mg/kg	I
PR79-WT-028-SD-01	N	trans-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Trichloroethene (TCE)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-028-SD-01	N	Vinyl chloride	0.00860	0.00430 U	0.00430 UJ		mg/kg	I

Test Method: SW9045D	Extraction Method: METHOD							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-026-SD-01	N	pH	0.100	5.50	5.50 J	-	ph units	H2
PR79-WT-027-SD-01	N	pH	0.100	5.60	5.60 J		ph units	H2/Z8

Table of All Qualified Results

Test Method: SW9045D	**Extraction Method: METHOD**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-028-SD-01	N	pH	0.100	5.30	5.30 J	-	ph units	H2

Test Method: SW9060A	**Extraction Method: NONE**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Total Organic Carbon	5600	350000	350000 J		ug/g	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Sulfide	0.600	0.460 U	0.460 U	0.460 UJ	Z8

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-026-PW-01	N	Dibenz(a,h)anthracene	0.200	0.0990 U	0.0990 U	0.0990 UJ	V1
PR79-WT-026-SW-01	N	Dibenz(a,h)anthracene	0.200	0.0980 U	0.0980 U	0.0980 UJ	V1
PR79-WT-027-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 U	0.0940 UJ	V1
PR79-WT-027-SW-01	N	Dibenz(a,h)anthracene	0.200	0.100 U	0.100 U	0.100 UJ	V1
PR79-WT-028-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 U	0.0940 UJ	V1
PR79-WT-028-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 U	0.0930 UJ	V1

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-026-SD-01	N	Dibenz(a,h)anthracene	0.0430	0.0210 U	0.0210 UJ	0.0210 UJ	I/V1
PR79-WT-026-SD-01	N	Pentachlorophenol	0.210	0.110 U	0.110 U	0.110 UJ	I
PR79-WT-027-SD-01	N	1,4-Dioxane (p-Dioxane)	0.570	0.0100 JL	0.0100 J	0.0100 J	C/TR/Z8
PR79-WT-027-SD-01	N	2-Methylnaphthalene	0.110	0.0570 U	0.0570 U	0.0570 UJ	Z8
PR79-WT-027-SD-01	N	Acenaphthene	0.110	0.0570 U	0.0570 U	0.0570 UJ	Z8
PR79-WT-027-SD-01	N	Acenaphthylene	0.110	0.0570 U	0.0570 U	0.0570 UJ	Z8
PR79-WT-027-SD-01	N	Anthracene	0.110	0.0570 U	0.0570 U	0.0570 UJ	Z8
PR79-WT-027-SD-01	N	Benzo(a)anthracene	0.110	0.0270 J	0.0270 J	0.0270 J	TR/Z8
PR79-WT-027-SD-01	N	Benzo(a)pyrene	0.110	0.0380 J	0.0380 J	0.0380 J	TR/Z8
PR79-WT-027-SD-01	N	Benzo(b)fluoranthene	0.110	0.0740 J	0.0740 J	0.0740 J	TR/Z8
PR79-WT-027-SD-01	N	Benzo(g,h,i)perylene	0.110	0.0460 J	0.0460 J	0.0460 J	TR/Z8
PR79-WT-027-SD-01	N	Benzo(k)fluoranthene	0.110	0.0380 J	0.0380 J	0.0380 J	TR/Z8
PR79-WT-027-SD-01	N	Chrysene	0.110	0.0170 J	0.0170 J	0.0170 J	TR/Z8
PR79-WT-027-SD-01	N	Dibenz(a,h)anthracene	0.110	0.0150 J	0.0150 J	0.0150 J	TR/Z8/V1
PR79-WT-027-SD-01	N	Fluoranthene	0.110	0.0420 J	0.0420 J	0.0420 J	TR/Z8
PR79-WT-027-SD-01	N	Fluorene	0.110	0.0570 U	0.0570 U	0.0570 UJ	Z8
PR79-WT-027-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.110	0.0380 J	0.0380 J	0.0380 J	TR/Z8
PR79-WT-027-SD-01	N	Naphthalene	0.110	0.0570 U	0.0570 U	0.0570 UJ	Z8
PR79-WT-027-SD-01	N	Pentachlorophenol	0.570	0.280 U	0.280 U	0.280 UJ	Z8
PR79-WT-027-SD-01	N	Phenanthrene	0.110	0.0240 J	0.0240 J	0.0240 J	TR/Z8
PR79-WT-027-SD-01	N	Pyrene	0.110	0.0550 J	0.0550 J	0.0550 J	TR/Z8
PR79-WT-028-SD-01	N	Dibenz(a,h)anthracene	0.0190	0.00960 U	0.00960 U	0.00960 UJ	V1

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Cadmium	0.00560	0.000849 J	0.000849 J	0.000849 J	TR/Z8
PR79-WT-027-SD-01	N	Copper	0.0500	0.00840 J	0.00840 J	0.00840 J	TR/Z8
PR79-WT-027-SD-01	N	Lead	0.00300	0.0362	0.0362	0.0362 J	Z8
PR79-WT-027-SD-01	N	Nickel	0.0220	0.0167 J	0.0167 J	0.0167 J	TR/Z8

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Silver	0.0120	0.00470 U	0.00470 U	0.00470 UJ	Z8
PR79-WT-027-SD-01	N	Zinc	0.0380	0.0844	0.0844	0.0844 J	Z8

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Aluminum	170	13000	13000	13000 J	Z8
PR79-WT-027-SD-01	N	Barium	2.80	43.0	43.0	43.0 J	Z8
PR79-WT-027-SD-01	N	Calcium	56.0	4520	4520	4520 J	Z8
PR79-WT-027-SD-01	N	Chromium	5.60	7.74	7.74	7.74 J	Z8
PR79-WT-027-SD-01	N	Copper	14.0	5.40 J	5.40 J	5.40 J	TR/Z8
PR79-WT-027-SD-01	N	Iron	56.0	7120	7120	7120 J	Z8
PR79-WT-027-SD-01	N	Lead	2.80	47.5	47.5	47.5 J	Z8
PR79-WT-027-SD-01	N	Magnesium	56.0	1060	1060	1060 J	Z8
PR79-WT-027-SD-01	N	Manganese	2.80	46.8	46.8	46.8 J	Z8
PR79-WT-027-SD-01	N	Nickel	5.60	5.54 J	5.60 U	5.60 UJ	L/Z8
PR79-WT-027-SD-01	N	Potassium	560	709	709	709 J	Z8
PR79-WT-027-SD-01	N	Silver	5.60	0.260 J	0.260 J	0.260 J	TR/Z8
PR79-WT-027-SD-01	N	Sodium	560	203 J	280 U	280 UJ	L/Z8
PR79-WT-027-SD-01	N	Vanadium	5.60	16.9	16.9	16.9 J	Z8
PR79-WT-027-SD-01	N	Zinc	11.0	12.2	12.2	12.2 J	Z8

Modified Qualifiers for test method SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Antimony	0.560	0.260 J	0.260 J	0.260 J	TR/Z8
PR79-WT-027-SD-01	N	Arsenic	2.80	3.00	3.00	3.00 J	Z8
PR79-WT-027-SD-01	N	Beryllium	0.560	3.40	3.40	3.40 J	Z8
PR79-WT-027-SD-01	N	Cadmium	0.560	0.445 J	0.445 J	0.445 J	TR/Z8
PR79-WT-027-SD-01	N	Cobalt	0.560	1.68	1.68	1.68 J	Z8
PR79-WT-027-SD-01	N	Selenium	2.80	2.26 J	2.26 J	2.26 J	TR/Z8
PR79-WT-027-SD-01	N	Thallium	0.560	0.110 J	0.110 J	0.110 J	TR/Z8

Modified Qualifiers for test method SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Mercury	0.180	0.130 J	0.130 J	0.130 J	TR/Z8

Modified Qualifiers for test method SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	pH	0.100	5.60	5.60 J	5.60 J	H2/Z8

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	Total Organic Carbon	5600	350000	350000	350000 J	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect
V1	ICV
Z8	Low percent solids

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	no SD in this data set
Was the laboratory duplicate RPD within project acceptance limits?			•	no Lab Dup in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?		•		no lab dup in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		acceptable
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			see revised COC and email in data package
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		Limits for pyrene-d10 incorrect in lab data, should be 31-128% as in eQAPP so %R not flagged on surr Form 2. See Surr outlier form. LCS 2MN above criteria, targets within limits
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		WG276804-2, WG277641-2: 1,4-dioxane below limits
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FDs in this data set
Were QAPP specified laboratory PQLs achieved?	•			lab LOQs meet QAPP PQLs (SW, PW, SD) but not all meet Project Action Limits (as noted in QAPP). See anomalies report: 23 analytes in 2 samples did not meet PQL.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A: ICV low dibenzo (ah)anthracene assoc samples biased low (WT-026, WT-027, WT-028 SW, PW, SD). Other issues noted are assoc with results that were not reported. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see Lab Blank outliers
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	no serial dilution in this data set
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		ND result for 6010 Ag in sediment SN3300-03 and Na in SN3300-9 exceed PQL in QAPP. SEM ok. PW, SW ok. See anomalies report: 6 analyte/1 sample did not meet PQL for AVS. 6010C/3050B: 6 analytes/2 samples did not meet PQL.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			for Stage 2A
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		No qual to TB
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	no SD in this data set
Was the laboratory duplicate RPD within project acceptance limits?			•	no Lab Dup analyzed in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 7 analytes in 2 samples did not meet PQL criteria
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no Lab Dup in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?		•		1 analyte in 1 sample did not meet PQL - see anomalies report
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3300

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			see revised COC and email in data pkg
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see surrogate outlier report. VOC full scan surr %R below criteria for sample -3, -9, -15. VOCSIM surr met criteria. Note sample -9 reported in revised EDD - see ADR for SN3300_RE.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB-03-SDBG-01 MeCl2 0.0087 J mg/kg. Assoc sediments either ND or >LOQ, no actions.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 21 analytes in 2 samples did not meet PQL criteria
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV and CCV high for Chloroethane, carbon disulfide; assoc PW, SW results ND. CCV low ClMethane: 2SE, 1TB may be biased low. IS below criteria PR79-WT-026-SD-01, PR79-WT-027-SD-01, PR79-WT-028-SD-01; results may be biased high. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		Sediment samples analyzed >24h
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no Lab Dup - see LCS/LCSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		pH hold time not noted in case narrative
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?		•		no Lab Dup in this data set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 2 analytes in 2 samples did not meet PQL criteria
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3300_RE

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3300_RE
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	SW8260C
PR79-WT-027-SD-01	SN3300-9	Solid	Field Sample/N	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3300_RE. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Extracted Internal Standard

Prep Hold Time

Surrogate

Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 36 results (100.00%) out of the 36 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

SN3300_RE just for sample PR79-WT-027-SD-01 (SN3300-9) 8260 VOC results.

Analytical Method	Data Reviewer Comment
SW8260C	% Solids <30% for sample PR79-WT-027-SD-01. Results qualified (J/UJ) using qualify by batch (reason code Z8).

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-027-SD-01 (N)/ SN3300-9	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	54.60	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	1,1,1-Trichloroethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,1-Dichloroethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,1-Dichloroethene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2,3-Trichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2,4-Trichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2,4-Trimethylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2-Dichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,3,5-Trimethylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,3-Dichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	2-Butanone (MEK)	0.160	0.110 J	0.110 J	-	mg/kg	I/TR/Z8
PR79-WT-027-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.160	0.0810 U	0.0810 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Acetone	0.160	0.540	0.540 J	-	mg/kg	I/Z8
PR79-WT-027-SD-01	N	Benzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Bromodichloromethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Bromomethane	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Carbon disulfide	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Chloroethane	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Chloroform	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Chloromethane	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	cis-1,2-Dichloroethene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Dibromochloromethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Ethylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Isopropylbenzene (Cumene)	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	m,p-Xylene	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Methylene chloride	0.160	0.0810 U	0.0810 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	n-Butylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	n-Propylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	o-Xylene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	sec-Butylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	tert-Butyl alcohol	0.160	0.0810 U	0.0810 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	tert-Butylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Toluene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	trans-1,2-Dichloroethene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Trichloroethene (TCE)	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Vinyl chloride	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	1,1,1-Trichloroethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,1-Dichloroethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,1-Dichloroethene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2,3-Trichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2,4-Trichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2,4-Trimethylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,2-Dichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,3,5-Trimethylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	1,3-Dichlorobenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	2-Butanone (MEK)	0.160	0.110 J	0.110 J	-	mg/kg	I/TR/Z8
PR79-WT-027-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.160	0.0810 U	0.0810 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Acetone	0.160	0.540	0.540 J	-	mg/kg	I/Z8
PR79-WT-027-SD-01	N	Benzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Bromodichloromethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Bromomethane	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Carbon disulfide	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Chloroethane	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Chloroform	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Chloromethane	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	cis-1,2-Dichloroethene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Dibromochloromethane	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Ethylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Isopropylbenzene (Cumene)	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	m,p-Xylene	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Methylene chloride	0.160	0.0810 U	0.0810 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	n-Butylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	n-Propylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	o-Xylene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	sec-Butylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	tert-Butyl alcohol	0.160	0.0810 U	0.0810 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	tert-Butylbenzene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Toluene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	trans-1,2-Dichloroethene	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8
PR79-WT-027-SD-01	N	Trichloroethene (TCE)	0.0320	0.0160 U	0.0160 UJ		mg/kg	I/Z8

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-027-SD-01	N	Vinyl chloride	0.0650	0.0320 U	0.0320 UJ		mg/kg	I/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-027-SD-01	N	1,1,1-Trichloroethane	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,1-Dichloroethane	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,1-Dichloroethene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,2,3-Trichlorobenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,2,4-Trichlorobenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,2,4-Trimethylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,2-Dichlorobenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,3,5-Trimethylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	1,3-Dichlorobenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	2-Butanone (MEK)	0.160	0.110 J	0.110 J	0.110 J	I/TR/Z8
PR79-WT-027-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.160	0.0810 U	0.0810 UJ	0.0810 UJ	I/Z8
PR79-WT-027-SD-01	N	Acetone	0.160	0.540	0.540 J	0.540 J	I/Z8
PR79-WT-027-SD-01	N	Benzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Bromodichloromethane	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Bromomethane	0.0650	0.0320 U	0.0320 UJ	0.0320 UJ	I/Z8
PR79-WT-027-SD-01	N	Carbon disulfide	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Chloroethane	0.0650	0.0320 U	0.0320 UJ	0.0320 UJ	I/Z8
PR79-WT-027-SD-01	N	Chloroform	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Chloromethane	0.0650	0.0320 U	0.0320 UJ	0.0320 UJ	I/Z8
PR79-WT-027-SD-01	N	cis-1,2-Dichloroethene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Dibromochloromethane	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Ethylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Isopropylbenzene (Cumene)	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	m,p-Xylene	0.0650	0.0320 U	0.0320 UJ	0.0320 UJ	I/Z8
PR79-WT-027-SD-01	N	Methylene chloride	0.160	0.0810 U	0.0810 UJ	0.0810 UJ	I/Z8
PR79-WT-027-SD-01	N	n-Butylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	n-Propylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	o-Xylene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	sec-Butylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	tert-Butyl alcohol	0.160	0.0810 U	0.0810 UJ	0.0810 UJ	I/Z8
PR79-WT-027-SD-01	N	tert-Butylbenzene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Toluene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	trans-1,2-Dichloroethene	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Trichloroethene (TCE)	0.0320	0.0160 U	0.0160 UJ	0.0160 UJ	I/Z8
PR79-WT-027-SD-01	N	Vinyl chloride	0.0650	0.0320 U	0.0320 UJ	0.0320 UJ	I/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
I	Surrogate recovery outside project limits.
TR	Trace Level Detect
Z8	Low percent solids

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Data Validation Report for SN3300_RE

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			see revised COC and email in data pkg
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB-03-SDBG-01 MeCl2 0.0087 J mg/kg. Assoc sediments either ND or >LOQ, no actions.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		SW8260C/SW5035 sample SN3300-9: 11 analytes in 1 sample did not meet PALs. Note %Solids <30% for sample PR79-WT-027-SD-01; all results qualified by batch (J/UJ).
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV low ClMethane: 2SE, 1TB biased low. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3396

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3396
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-001-PW-01	SN3396-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-001-PW-01-F	SN3396-4		Field Sample/N					X		X		X				
PR79-WT-032-PW-01	SN3396-9		Field Sample/N	X		X	X		X		X			X		
PR79-WT-032-PW-01-F	SN3396-10		Field Sample/N					X		X		X				
PR79-WT-001-SD-01	SN3396-5	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-001-SD-01	SN3396-6	Solid	Field Sample/N		X		X									
PR79-WT-032-SD-01	SN3396-11	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-032-SD-01	SN3396-12	Solid	Field Sample/N		X		X									
TB-05-SDBG-01	SN3396-14	Solid	Trip Blank/TB											X		
PR79-WT-001-SW-01	SN3396-1	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-001-SW-01-F	SN3396-2	Water	Field Sample/N					X		X		X				
PR79-WT-032-SW-01	SN3396-7	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-032-SW-01-F	SN3396-8	Water	Field Sample/N					X		X		X				
TB-05-PWBG-01	SN3396-13	Water	Trip Blank/TB											X		

Data Validation Report for SN3396

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-001-PW-01	SN3396-3		Field Sample/N	X
PR79-WT-001-PW-01-F	SN3396-4		Field Sample/N	
PR79-WT-032-PW-01	SN3396-9		Field Sample/N	X
PR79-WT-032-PW-01-F	SN3396-10		Field Sample/N	
PR79-WT-001-SD-01	SN3396-5	Solid	Field Sample/N	
PR79-WT-001-SD-01	SN3396-6	Solid	Field Sample/N	
PR79-WT-032-SD-01	SN3396-11	Solid	Field Sample/N	
PR79-WT-032-SD-01	SN3396-12	Solid	Field Sample/N	
TB-05-SDBG-01	SN3396-14	Solid	Trip Blank/TB	
PR79-WT-001-SW-01	SN3396-1	Water	Field Sample/N	X
PR79-WT-001-SW-01-F	SN3396-2	Water	Field Sample/N	
PR79-WT-032-SW-01	SN3396-7	Water	Field Sample/N	X
PR79-WT-032-SW-01-F	SN3396-8	Water	Field Sample/N	
TB-05-PWBG-01	SN3396-13	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3396. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Extracted Internal Standard

Lab Blank

Lab Replicate RPD

LCS Recovery

LCS RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 86 results (12.57%) out of the 684 results (sample and field QC samples) reported are qualified based on review and 1 results (0.15%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Stage 2A for all parameters

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

July 23, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method AVS, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (MS)/ WG277393-3	Sulfide	67.74	75 - 125	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	Sulfide	0.140	0.100 U	0.100 UJ		umoles/g	M
PR79-WT-032-SD-01	N	Sulfide	0.120	0.0960 U	0.0960 UJ		umoles/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277071-1 (LB)/ WG277071-1	Chrysene	0.05800	< 0.036	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SW-01	N	Chrysene	0.190	0.0490 J	0.0950 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277071-2 (BS)/ WG277071-2	Pentachlorophenol	26.00	36 - 141	10 - 141	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-001-SW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C/I
PR79-WT-032-PW-01	N	Pentachlorophenol	0.960	0.480 ULM	0.480 UJ	-	ug/l	C/M
PR79-WT-032-SW-01	N	Pentachlorophenol	0.950	0.480 ULM	0.480 UJ	-	ug/l	C/M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277157-2 (BS)/ WG277157-2	1,4-Dioxane (p-Dioxane)	27.89	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00280 JL	0.00280 J	-	mg/kg	C/TR
PR79-WT-032-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00300 JLM	0.00300 J	-	mg/kg	C/M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01 (MS)/ WG277071-7	Pentachlorophenol	19.63	36 - 141	10 - 141	percent	J/UJ	M	
PR79-WT-032-PW-01 (MS)/ WG277071-7	Acenaphthylene	31.22	35 - 121	10 - 121	percent	J/UJ	M	
PR79-WT-032-PW-01 (MS)/ WG277071-7	Anthracene	37.57	53 - 119	10 - 119	percent	J/UJ	M	
PR79-WT-032-PW-01 (MS)/ WG277071-7	Benzo(a)pyrene	40.21	53 - 120	10 - 120	percent	J/UJ	M	
PR79-WT-032-PW-01 (SD)/ WG277071-8	Anthracene	40.31	53 - 119	10 - 119	percent	J/UJ	M	
PR79-WT-032-PW-01 (SD)/ WG277071-8	Benzo(a)pyrene	41.84	53 - 120	10 - 120	percent	J/UJ	M	
PR79-WT-032-SW-01 (MS)/ WG277071-5	Pentachlorophenol	10.13	36 - 141	10 - 141	percent	J/UJ	M	
PR79-WT-032-SW-01 (MS)/ WG277071-5	Anthracene	52.08	53 - 119	10 - 119	percent	J/UJ	M	
PR79-WT-032-SW-01 (MS)/ WG277071-5	Benzo(a)pyrene	52.08	53 - 120	10 - 120	percent	J/UJ	M	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Benzo(a)pyrene	25.00	53 - 120	10 - 120	percent	J/UJ	M	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Anthracene	30.73	53 - 119	10 - 119	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-PW-01	N	Pentachlorophenol	0.960	0.480 ULM	0.480 UJ	-	ug/l	C/M
PR79-WT-032-PW-01	N	Anthracene	0.190	0.0960 UMM	0.0960 UJ	-	ug/l	M
PR79-WT-032-PW-01	N	Benzo(a)pyrene	0.190	0.0960 UMM	0.0960 UJ	-	ug/l	M
PR79-WT-032-PW-01	N	Acenaphthylene	0.190	0.0960 UM	0.0960 U	-	ug/l	M
PR79-WT-032-SW-01	N	Pentachlorophenol	0.950	0.480 ULM	0.480 UJ	-	ug/l	C/M
PR79-WT-032-SW-01	N	Anthracene	0.190	0.0950 UM	0.0950 UJ	-	ug/l	M
PR79-WT-032-SW-01	N	Benzo(a)pyrene	0.190	0.0950 UMM	0.0950 UJ	-	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ WG277157-4	1,4-Dioxane (p-Dioxane)	28.68	30 - 150	10 - 150	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277157-4	Benzo(a)pyrene	49.54	50 - 125	10 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00300 JLM	0.00300 J	-	mg/kg	C/M/TR
PR79-WT-032-SD-01	N	Benzo(a)pyrene	0.0240	0.0120 UM	0.0120 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01 (SD)/ WG277071-8	Pentachlorophenol	2.360	< 0.94	< 0.94	ug/l	J/None	D	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Acenaphthylene	0.2100	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Anthracene	0.4100	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Benzo(a)pyrene	0.5200	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Pentachlorophenol	2.510	< 0.96	< 0.96	ug/l	J/None	D	
PR79-WT-032-SW-01 (SD)/ WG277071-6	Benzo (a)anthracene	22.22	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01 (N)/ SN3396-9		14.62	< 14	< 28	days	J/UJ	H2	Prep to Test Exceeds UWL
PR79-WT-032-PW-01 (N)/ SN3396-9	Fluorene	14.62	< 14	< 28	days	J/UJ	H2	Prep to Test Exceeds UWL
PR79-WT-032-SW-01 (N)/ SN3396-7		14.55	< 14	< 28	days	J/UJ	H2	Prep to Test Exceeds UWL
PR79-WT-032-SW-01 (N)/ SN3396-7	Fluorene	14.55	< 14	< 28	days	J/UJ	H2	Prep to Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-001-SW-01 (N)/ SN3396-1	2,4-Dibromophenol	0.4460	10 - 130	10 - 130	percent	J/X	I	
PR79-WT-032-PW-01 (N)/ SN3396-9	2-Methylnaphthalene -d10	121.0	43 - 92	10 - 92	percent	J/None	I	
PR79-WT-032-SW-01 (N)/ SN3396-7	2-Methylnaphthalene -d10	94.10	43 - 92	10 - 92	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07ICW1 (LB)	Vanadium	0.2300	< 4	< 10	ug/l	None/None	L	
PBWNE07ICW1 (LB)	Iron	13.00	< 5.4	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01-F	N	Vanadium	10.0	0.880 J	4.00 U		ug/l	L
PR79-WT-001-SW-01-F	N	Iron	100	9.60 J	80.0 U		ug/l	L
PR79-WT-032-PW-01-F	N	Vanadium	10.0	0.490 J	4.00 U		ug/l	L
PR79-WT-032-SW-01-F	N	Vanadium	10.0	0.420 JN	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Manganese	114.9	90 - 114	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Barium	115.4	88 - 113	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Aluminum	115.9	86 - 115	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Vanadium	116.5	90 - 111	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Copper	116.6	86 - 114	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Iron	117.0	87 - 115	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Potassium	121.1	86 - 114	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Chromium	123.0	90 - 113	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Calcium	126.8	87 - 113	30 - 125	percent	J/None	M	
PR79-WT-032-SW-01-F (MS)/ SN3396-008S	Sodium	128.0	87 - 115	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SW-01-F	N	Aluminum	300	162 JN	162 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Barium	5.00	13.2 N	13.2 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Calcium	100	2430 N	2430 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Copper	25.0	1.50 JN	1.50 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Iron	100	180 N	180 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Manganese	5.00	39.6 N	39.6 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Potassium	1000	887 JN	887 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Sodium	1000	13800 N	13800 J	+	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS1 (LB)/ PBSNE08ICS1	Zinc	0.001780	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Chromium	0.06500	< 0.026	< 1	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Magnesium	1.400	< 0.68	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Iron	1.800	< 1.4	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Potassium	14.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Sodium	3.900	< 1.5	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Nickel	0.05000	< 0.044	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Chromium	0.07400	< 0.026	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Magnesium	1.500	< 0.68	< 10	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Potassium	20.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Sodium	6.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	Sodium	89.0	63.2 J	89.0 U		mg/kg	L
PR79-WT-032-SD-01	N	Sodium	95.0	35.9 J	48.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ SN3396-012P	Zinc	115.3	82 - 113	30 - 125	percent	J/None	M	
PR79-WT-032-SD-01 (MS)/ SN3396-012S	Lead	113.7	81 - 112	30 - 125	percent	J/None	M	
PR79-WT-032-SD-01 (MS)/ SN3396-012S	Zinc	115.1	82 - 113	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Lead	0.000580	0.00307 N	0.00307 J	+	umoles/ g	M
PR79-WT-032-SD-01	N	Zinc	0.00720	0.0301 N	0.0301 J	+	umoles/ g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ SN3396-011P	Iron	-565.2	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-WT-032-SD-01 (SD)/ SN3396-011P	Aluminum	141.3	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-WT-032-SD-01 (SD)/ SN3396-011P	Calcium	238.0	81 - 116	30 - 125	percent	J/None	M	
PR79-WT-032-SD-01 (MS)/ SN3396-011S	Iron	-22.22	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-WT-032-SD-01 (MS)/ SN3396-011S	Calcium	156.3	81 - 116	30 - 125	percent	J/None	M	
PR79-WT-032-SD-01 (MS)/ SN3396-011S	Aluminum	294.4	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-WT-032-SD-01 (MS)/ SN3396-011S	Manganese	69.04	84 - 114	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Calcium	9.50	449 N*	449 J	+	mg/kg	M/D
PR79-WT-032-SD-01	N	Manganese	0.480	120 N	120 J	-	mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ SN3396-011P	Calcium	21.75	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Calcium	9.50	449 N*	449 J	+	mg/kg	M/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07ICW1 (LB)/ PBWNE07ICW1	Vanadium	0.2300	< 0.23	< 10	ug/l	U/None	L	
PBWNE07ICW1 (LB)/ PBWNE07ICW1	Barium	0.6500	< 0.23	< 5	ug/l	U/None	L	
PBWNE07ICW1 (LB)/ PBWNE07ICW1	Calcium	12.00	< 11	< 100	ug/l	U/None	L	
PBWNE07ICW1 (LB)/ PBWNE07ICW1	Iron	13.00	< 5.4	< 100	ug/l	U/None	L	
PBWNE07ICW1 (LB)/ PBWNE07ICW1	Magnesium	13.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE07ICW1 (LB)/ PBWNE07ICW1	Sodium	200.0	< 24	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01	N	Vanadium	10.0	0.900 J	4.00 U		ug/l	L
PR79-WT-001-SW-01	N	Vanadium	10.0	0.660 J	4.00 U		ug/l	L
PR79-WT-032-PW-01	N	Vanadium	10.0	1.30 J	4.00 U		ug/l	L
PR79-WT-032-SW-01	N	Vanadium	10.0	0.230 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01 (SD)/ SN3396-009P	Chromium	114.6	90 - 113	30 - 125	percent	J/None	M	
PR79-WT-032-PW-01 (MS)/ SN3396-009S	Chromium	114.6	90 - 113	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-PW-01	N	Chromium	10.0	0.910 JN	0.910 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07IMW1 (LB)	Beryllium	0.04400	< 0.2	< 1	ug/l	None/None	L	
PBWNE07IMW1 (LB)	Lead	0.1200	< 0.5	< 1	ug/l	None/None	L	
PBWNE07IMW1 (LB)	Nickel	0.2100	< 1.2	< 2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01-F	N	Beryllium	1.00	0.0870 J	0.200 U		ug/l	L
PR79-WT-001-PW-01-F	N	Lead	1.00	0.140 J	0.500 U		ug/l	L
PR79-WT-001-PW-01-F	N	Nickel	2.00	1.10 J	1.20 U		ug/l	L
PR79-WT-001-SW-01-F	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	L
PR79-WT-001-SW-01-F	N	Lead	1.00	0.0770 J	0.500 U		ug/l	L
PR79-WT-001-SW-01-F	N	Nickel	2.00	0.580 J	1.20 U		ug/l	L
PR79-WT-032-PW-01-F	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-032-PW-01-F	N	Lead	1.00	0.320 JN	0.500 U		ug/l	L
PR79-WT-032-SW-01-F	N	Beryllium	1.00	0.160 J	0.200 U		ug/l	L
PR79-WT-032-SW-01-F	N	Lead	1.00	0.310 J	0.500 U		ug/l	L
PR79-WT-032-SW-01-F	N	Nickel	2.00	0.430 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01-F (MS)/ SN3396-010S	Lead	116.7	88 - 115	30 - 125	percent	J/None	M	
PR79-WT-032-PW-01-F (MS)/ SN3396-010S	Thallium	117.0	82 - 116	30 - 125	percent	J/None	M	
PR79-WT-032-PW-01-F (MS)/ SN3396-010S	Antimony	117.8	85 - 117	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-PW-01-F	N	Antimony	1.00	0.180 JN	0.180 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ SN3396-011P	Antimony	60.24	72 - 124	30 - 125	percent	J/UJ	M	
PR79-WT-032-SD-01 (MS)/ SN3396-011S	Antimony	51.56	72 - 124	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Antimony	0.0950	0.0480 UN	0.0480 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07IMW1 (LB)/ PBWNE07IMW1	Beryllium	0.04400	< 0.034	< 1	ug/l	U/None	L	
PBWNE07IMW1 (LB)/ PBWNE07IMW1	Lead	0.1200	< 0.074	< 1	ug/l	U/None	L	
PBWNE07IMW1 (LB)/ PBWNE07IMW1	Nickel	0.2100	< 0.15	< 2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01	N	Beryllium	1.00	0.0490 J	0.200 U		ug/l	L
PR79-WT-001-PW-01	N	Lead	1.00	0.160 J	0.500 U		ug/l	L
PR79-WT-001-PW-01	N	Nickel	2.00	0.950 J	1.20 U		ug/l	L
PR79-WT-001-SW-01	N	Beryllium	1.00	0.140 J	0.200 U		ug/l	L
PR79-WT-001-SW-01	N	Lead	1.00	0.480 J	0.500 U		ug/l	L
PR79-WT-001-SW-01	N	Nickel	2.00	0.390 J	1.20 U		ug/l	L
PR79-WT-032-PW-01	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-032-PW-01	N	Lead	1.00	0.430 J	0.500 U		ug/l	L
PR79-WT-032-PW-01	N	Nickel	2.00	0.440 J	1.20 U		ug/l	L
PR79-WT-032-SW-01	N	Beryllium	1.00	0.0790 J	0.200 U		ug/l	L
PR79-WT-032-SW-01	N	Lead	1.00	0.330 J	0.500 U		ug/l	L
PR79-WT-032-SW-01	N	Nickel	2.00	0.340 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SW-01 (MS)/ SN3396-007S	Mercury	80.90	82 - 119	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SW-01	N	Mercury	0.200	0.0650 JNA	0.0650 J	-	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01 (MS)/ WG277551-9	Bromodichloromethane	127.6	79 - 125	10 - 125	percent	J/None	M	
PR79-WT-032-PW-01 (MS)/ WG277551-9	Carbon disulfide	135.6	64 - 133	10 - 133	percent	J/None	M	
PR79-WT-032-PW-01 (MS)/ WG277551-9	Bromomethane	146.0	53 - 141	10 - 141	percent	J/None	M	
PR79-WT-032-PW-01 (MS)/ WG277551-9	Chloroethane	147.6	60 - 138	10 - 138	percent	J/None	M	
PR79-WT-032-SW-01 (MS)/ WG277551-7	Benzene	120.4	79 - 120	10 - 120	percent	J/None	M	
PR79-WT-032-SW-01 (MS)/ WG277551-7	Toluene	123.0	80 - 121	10 - 121	percent	J/None	M	
PR79-WT-032-SW-01 (MS)/ WG277551-7	Chloroform	124.8	79 - 124	10 - 124	percent	J/None	M	
PR79-WT-032-SW-01 (MS)/ WG277551-7	Bromodichloromethane	133.4	79 - 125	10 - 125	percent	J/None	M	
PR79-WT-032-SW-01 (MS)/ WG277551-7	Carbon disulfide	137.0	64 - 133	10 - 133	percent	J/None	M	
PR79-WT-032-SW-01 (MS)/ WG277551-7	Chloroethane	151.8	60 - 138	10 - 138	percent	J/None	M	
PR79-WT-032-SW-01 (SD)/ WG277551-8	Bromodichloromethane	128.4	79 - 125	10 - 125	percent	J/None	M	
PR79-WT-032-SW-01 (SD)/ WG277551-8	Carbon disulfide	133.4	64 - 133	10 - 133	percent	J/None	M	
PR79-WT-032-SW-01 (SD)/ WG277551-8	Chloroethane	147.8	60 - 138	10 - 138	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (MS)/ WG277473-6	1,2,3-Trichlorobenzene	52.38	66 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-032-SD-01 (MS)/ WG277473-6	1,2,4-Trichlorobenzene	57.14	67 - 129	10 - 129	percent	J/UJ	M	
PR79-WT-032-SD-01 (MS)/ WG277473-6	4-Methyl-2-pentanone (MIBK)	61.90	65 - 135	10 - 135	percent	J/UJ	M	
PR79-WT-032-SD-01 (MS)/ WG277473-6	n-Butylbenzene	69.05	70 - 128	10 - 128	percent	J/UJ	M	
PR79-WT-032-SD-01 (MS)/ WG277473-6	1,2-Dichlorobenzene	71.43	78 - 121	10 - 121	percent	J/UJ	M	
PR79-WT-032-SD-01 (MS)/ WG277473-6	1,3-Dichlorobenzene	73.81	77 - 121	10 - 121	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	n-Butylbenzene	50.00	70 - 128	10 - 128	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	1,2,4-Trichlorobenzene	52.27	67 - 129	10 - 129	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	1,2,3-Trichlorobenzene	54.55	66 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	p-Cymene (p-Isopropyltoluene)	54.55	73 - 127	10 - 127	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	sec-Butylbenzene	56.82	73 - 126	10 - 126	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	tert-Butylbenzene	59.09	73 - 125	10 - 125	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	n-Propylbenzene	59.09	73 - 125	10 - 125	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	1,2,4-Trimethylbenzene	61.36	75 - 123	10 - 123	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	Isopropylbenzene (Cumene)	63.64	68 - 134	10 - 134	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	1,3,5-Trimethylbenzene	63.64	73 - 124	10 - 124	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	Ethylbenzene	65.91	76 - 122	10 - 122	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	1,3-Dichlorobenzene	65.91	77 - 121	10 - 121	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	m,p-Xylene	66.67	77 - 124	10 - 124	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	o-Xylene	70.45	77 - 123	10 - 123	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	1,2-Dichlorobenzene	70.45	78 - 121	10 - 121	percent	J/UJ	M	
PR79-WT-032-SD-01 (SD)/ WG277473-7	Toluene	72.73	77 - 121	10 - 121	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	1,2,3-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,2,4-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,2,4-Trimethylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,2-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,3,5-Trimethylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,3-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	Ethylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	Isopropylbenzene (Cumene)	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	m,p-Xylene	0.00920	0.00460 UM	0.00460 UJ		mg/kg	M
PR79-WT-032-SD-01	N	n-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	n-Propylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	o-Xylene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	sec-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	tert-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	Toluene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ WG277473-7	n-Propylbenzene	23.73	< 20	< 20	rpd	J/None	D	
PR79-WT-032-SD-01 (SD)/ WG277473-7	sec-Butylbenzene	24.56	< 20	< 20	rpd	J/None	D	
PR79-WT-032-SD-01 (SD)/ WG277473-7	Isopropylbenzene (Cumene)	25.00	< 20	< 20	rpd	J/None	D	
PR79-WT-032-SD-01 (SD)/ WG277473-7	tert-Butylbenzene	26.67	< 20	< 20	rpd	J/None	D	
PR79-WT-032-SD-01 (SD)/ WG277473-7	n-Butylbenzene	27.45	< 20	< 20	rpd	J/None	D	
PR79-WT-032-SD-01 (SD)/ WG277473-7	p-Cymene (p-Isopropyltoluene)	28.57	< 20	< 20	rpd	J/None	D	
PR79-WT-032-SD-01 (SD)/ WG277473-7	tert-Butyl alcohol	29.79	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-001-SD-01 (N)/ SN3396-5	Dibromofluoromethane	138.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-032-SD-01 (N)/ SN3396-11	Dibromofluoromethane	121.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	Acetone	0.0280	0.0360	0.0360 J	+	mg/kg	I
PR79-WT-032-SD-01	N	Methylene chloride	0.0230	0.00850 J	0.00850 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-001-SD-01/ SN3396-5		43.00	< 24	< 48	hours	J/X	H2	
PR79-WT-001-SD-01 (N)/ SN3396-5		43.00	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-032-SD-01/ SN3396-11		46.75	< 24	< 48	hours	J/X	H2	
PR79-WT-032-SD-01 (N)/ SN3396-11		46.75	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-032-SD-01/ WG277178-2		46.75	< 24	< 48	hours	J/X	H2	
PR79-WT-032-SD-01 (N)/ WG277178-2		46.75	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	pH	0.100	6.20	6.20 J		ph units	H2
PR79-WT-032-SD-01	N	pH	0.100	5.90	5.90 J		ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ WG277761-4	Total Organic Carbon	139.3	80 - 120	30 - 120	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Total Organic Carbon	600	5400	5400 J	+	ug/g	M/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-SD-01 (SD)/ WG277761-4	Total Organic Carbon	25.64	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Total Organic Carbon	600	5400	5400 J	+	ug/g	M/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-032-PW-01 (SD)/ WG277150-9	Vinyl chloride	132.0	70 - 130	10 - 130	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-05-PWBG-01 (TB)/ SN3396-13	Benzene	0.01100	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: AVS Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	Sulfide	0.140	0.100 U	0.100 UJ		umoles/g	M
PR79-WT-032-SD-01	N	Sulfide	0.120	0.0960 U	0.0960 UJ		umoles/g	M

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-001-SW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C/I
PR79-WT-001-SW-01	N	Chrysene	0.190	0.0490 J	0.0950 U		ug/l	L
PR79-WT-032-PW-01	N	Pentachlorophenol	0.960	0.480 ULM	0.480 UJ	-	ug/l	C/M
PR79-WT-032-PW-01	N	Anthracene	0.190	0.0960 UMM	0.0960 UJ	-	ug/l	M
PR79-WT-032-PW-01	N	Benzo(a)pyrene	0.190	0.0960 UMM	0.0960 UJ	-	ug/l	M
PR79-WT-032-PW-01	N	Acenaphthylene	0.190	0.0960 UM	0.0960 U	-	ug/l	M
PR79-WT-032-SW-01	N	Pentachlorophenol	0.950	0.480 ULM	0.480 UJ	-	ug/l	C/M
PR79-WT-032-SW-01	N	Anthracene	0.190	0.0950 UM	0.0950 UJ	-	ug/l	M
PR79-WT-032-SW-01	N	Benzo(a)pyrene	0.190	0.0950 UMM	0.0950 UJ	-	ug/l	M

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00280 JL	0.00280 J	-	mg/kg	C/TR
PR79-WT-032-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00300 JLM	0.00300 J	-	mg/kg	C/M/TR
PR79-WT-032-SD-01	N	Benzo(a)pyrene	0.0240	0.0120 UM	0.0120 UJ		mg/kg	M

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01-F	N	Vanadium	10.0	0.880 J	4.00 U		ug/l	L
PR79-WT-001-SW-01-F	N	Iron	100	9.60 J	80.0 U		ug/l	L
PR79-WT-032-PW-01-F	N	Vanadium	10.0	0.490 J	4.00 U		ug/l	L
PR79-WT-032-SW-01-F	N	Vanadium	10.0	0.420 JN	4.00 U		ug/l	L
PR79-WT-032-SW-01-F	N	Aluminum	300	162 JN	162 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Barium	5.00	13.2 N	13.2 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Calcium	100	2430 N	2430 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Copper	25.0	1.50 JN	1.50 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Iron	100	180 N	180 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Manganese	5.00	39.6 N	39.6 J	+	ug/l	M
PR79-WT-032-SW-01-F	N	Potassium	1000	887 JN	887 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Sodium	1000	13800 N	13800 J	+	ug/l	M

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Lead	0.000580	0.00307 N	0.00307 J	+	umoles/g	M

Table of All Qualified Results

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Zinc	0.00720	0.0301 N	0.0301 J	+	umoles/g	M

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	Sodium	89.0	63.2 J	89.0 U		mg/kg	L
PR79-WT-032-SD-01	N	Sodium	95.0	35.9 J	48.0 U		mg/kg	L
PR79-WT-032-SD-01	N	Calcium	9.50	449 N*	449 J	+	mg/kg	M/D
PR79-WT-032-SD-01	N	Manganese	0.480	120 N	120 J	-	mg/kg	M

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01	N	Vanadium	10.0	0.900 J	4.00 U		ug/l	L
PR79-WT-001-SW-01	N	Vanadium	10.0	0.660 J	4.00 U		ug/l	L
PR79-WT-032-PW-01	N	Vanadium	10.0	1.30 J	4.00 U		ug/l	L
PR79-WT-032-PW-01	N	Chromium	10.0	0.910 JN	0.910 J	+	ug/l	M/TR
PR79-WT-032-SW-01	N	Vanadium	10.0	0.230 J	4.00 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01-F	N	Beryllium	1.00	0.0870 J	0.200 U		ug/l	L
PR79-WT-001-PW-01-F	N	Lead	1.00	0.140 J	0.500 U		ug/l	L
PR79-WT-001-PW-01-F	N	Nickel	2.00	1.10 J	1.20 U		ug/l	L
PR79-WT-001-SW-01-F	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	L
PR79-WT-001-SW-01-F	N	Lead	1.00	0.0770 J	0.500 U		ug/l	L
PR79-WT-001-SW-01-F	N	Nickel	2.00	0.580 J	1.20 U		ug/l	L
PR79-WT-032-PW-01-F	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-032-PW-01-F	N	Lead	1.00	0.320 JN	0.500 U		ug/l	L
PR79-WT-032-PW-01-F	N	Antimony	1.00	0.180 JN	0.180 J	+	ug/l	M/TR
PR79-WT-032-SW-01-F	N	Beryllium	1.00	0.160 J	0.200 U		ug/l	L
PR79-WT-032-SW-01-F	N	Lead	1.00	0.310 J	0.500 U		ug/l	L
PR79-WT-032-SW-01-F	N	Nickel	2.00	0.430 J	1.20 U		ug/l	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Antimony	0.0950	0.0480 UN	0.0480 UJ		mg/kg	M

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-PW-01	N	Beryllium	1.00	0.0490 J	0.200 U		ug/l	L
PR79-WT-001-PW-01	N	Lead	1.00	0.160 J	0.500 U		ug/l	L
PR79-WT-001-PW-01	N	Nickel	2.00	0.950 J	1.20 U		ug/l	L
PR79-WT-001-SW-01	N	Beryllium	1.00	0.140 J	0.200 U		ug/l	L
PR79-WT-001-SW-01	N	Lead	1.00	0.480 J	0.500 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SW-01	N	Nickel	2.00	0.390 J	1.20 U		ug/l	L
PR79-WT-032-PW-01	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-032-PW-01	N	Lead	1.00	0.430 J	0.500 U		ug/l	L
PR79-WT-032-PW-01	N	Nickel	2.00	0.440 J	1.20 U		ug/l	L
PR79-WT-032-SW-01	N	Beryllium	1.00	0.0790 J	0.200 U		ug/l	L
PR79-WT-032-SW-01	N	Lead	1.00	0.330 J	0.500 U		ug/l	L
PR79-WT-032-SW-01	N	Nickel	2.00	0.340 J	1.20 U		ug/l	L

Test Method: SW7470A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SW-01	N	Mercury	0.200	0.0650 JNA	0.0650 J	-	ug/l	M/TR

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	Acetone	0.0280	0.0360	0.0360 J	+	mg/kg	I
PR79-WT-032-SD-01	N	Methylene chloride	0.0230	0.00850 J	0.00850 J	+	mg/kg	I/TR
PR79-WT-032-SD-01	N	1,2,3-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,2,4-Trichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,2,4-Trimethylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,2-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,3,5-Trimethylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	1,3-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	Ethylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	Isopropylbenzene (Cumene)	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	m,p-Xylene	0.00920	0.00460 UM	0.00460 UJ		mg/kg	M
PR79-WT-032-SD-01	N	n-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	n-Propylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	o-Xylene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	sec-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	tert-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M
PR79-WT-032-SD-01	N	Toluene	0.00460	0.00230 UM	0.00230 UJ		mg/kg	M

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-001-SD-01	N	pH	0.100	6.20	6.20 J		ph units	H2
PR79-WT-032-SD-01	N	pH	0.100	5.90	5.90 J		ph units	H2

Table of All Qualified Results

Test Method: SW9060A Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-032-SD-01	N	Total Organic Carbon	600	5400	5400 J	+	ug/g	M/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-001-SW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 X	0.480 R	C/I
PR79-WT-032-PW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-032-PW-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Acenaphthylene	0.190	0.0960 UM	0.0960 UJ	0.0960 U	M
PR79-WT-032-PW-01	N	Anthracene	0.190	0.0960 UMM	0.0960 UJ	0.0960 UJ	M
PR79-WT-032-PW-01	N	Benzo(a)anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Benzo(a)pyrene	0.190	0.0960 UMM	0.0960 UJ	0.0960 UJ	M
PR79-WT-032-PW-01	N	Benzo(b)fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Benzo(k)fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Chrysene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Fluorene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Naphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Pentachlorophenol	0.960	0.480 ULM	0.480 UJ	0.480 UJ	C/M
PR79-WT-032-PW-01	N	Phenanthrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-PW-01	N	Pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-032-SW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-032-SW-01	N	2-Methylnaphthalene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Acenaphthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Acenaphthylene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Anthracene	0.190	0.0950 UM	0.0950 UJ	0.0950 UJ	M
PR79-WT-032-SW-01	N	Benzo(a)anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Benzo(a)pyrene	0.190	0.0950 UMM	0.0950 UJ	0.0950 UJ	M
PR79-WT-032-SW-01	N	Benzo(b)fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Benzo(g,h,i)perylene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Benzo(k)fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Chrysene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Fluorene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Naphthalene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Pentachlorophenol	0.950	0.480 ULM	0.480 UJ	0.480 UJ	C/M
PR79-WT-032-SW-01	N	Phenanthrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-032-SW-01	N	Pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-001-PW-01-F	N	Vanadium	10.0	0.880 J	0.880 J	4.00 U	L
PR79-WT-001-SW-01-F	N	Iron	100	9.60 J	9.60 J	80.0 U	L
PR79-WT-032-PW-01-F	N	Vanadium	10.0	0.490 J	0.490 J	4.00 U	L
PR79-WT-032-SW-01-F	N	Vanadium	10.0	0.420 JN	0.420 J	4.00 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-001-PW-01-F	N	Beryllium	1.00	0.0870 J	0.0870 J	0.200 U	L
PR79-WT-001-PW-01-F	N	Lead	1.00	0.140 J	0.140 J	0.500 U	L
PR79-WT-001-PW-01-F	N	Nickel	2.00	1.10 J	1.10 J	1.20 U	L
PR79-WT-001-SW-01-F	N	Beryllium	1.00	0.0480 J	0.0480 J	0.200 U	L
PR79-WT-001-SW-01-F	N	Lead	1.00	0.0770 J	0.0770 J	0.500 U	L
PR79-WT-001-SW-01-F	N	Nickel	2.00	0.580 J	0.580 J	1.20 U	L
PR79-WT-032-PW-01-F	N	Beryllium	1.00	0.110 J	0.110 J	0.200 U	L
PR79-WT-032-PW-01-F	N	Lead	1.00	0.320 JN	0.320 J	0.500 U	L
PR79-WT-032-SW-01-F	N	Beryllium	1.00	0.160 J	0.160 J	0.200 U	L
PR79-WT-032-SW-01-F	N	Lead	1.00	0.310 J	0.310 J	0.500 U	L
PR79-WT-032-SW-01-F	N	Nickel	2.00	0.430 J	0.430 J	1.20 U	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D	MS RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		%R low see outlier report
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this SDG
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3396

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			Note: Samples -7 and -9 incorrectly flagged as exceeding prep to analysis holding time. Qualifiers removed.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		No quals for %R above criteria since assoc results ND. SN3396-1 <10%R for 2,4-DIBROMOPHENOL; assoc ND result for Pentachlorophenol rejected (R).
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Chrysene in AQ MB; assoc results negated U see ADR outliers report
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•		•	LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		AQ LCS :%R below criteria for Pentachlorophenol. SO LCS %R below criteria for 14-dioxnae. See outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			PR79-WT-032-SW-01, PR79-WT-032-PW-01
Were MS/MSD recoveries within project acceptance limits?		•		SW, PW, SD MS/MSD %R and RPD - see outlier report
Was the MS/MSD RPD within project acceptance limits?		•		RPD outside criteria but assoc results ND
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this set
Were QAPP specified laboratory PQLs achieved?		•		10 analytes in 2 samples did not meet the requested RLs. See anomalies count report.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high for indeno(123cd)pyrene - assoc results ND. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			PR79-WT-001-SW-01 Pentachlorophenol

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see ADR report for blank quals. Note some TR results in filtered (-F) samples were not negated by ADR: V om samples -4, -8 and -10 and Fe in -2 negated (U) by validator; MS and/or TR reason codes removed as well as bias code.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?		•		see outlier report
Were the post spike recoveries within project acceptance limits?		•		PDS criteria met for MS %Rs outside criteria, no actions
Were the serial dilution RPD values within project acceptance limits?	•			for results >50X LOQ
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Some results manually negated by validator (Be, Ni, Pb) in filtered (-F) samples due to lab blank.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?		•		see outlier report
Were the post spike recoveries within project acceptance limits?	•			PDS %R within limits for MS outside limits.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this set
Were QAPP specified laboratory PQLs achieved?	•			check Beryllium
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?			•	SN3396-007 PDS >120%, however, PDS not assessed for Hg methods. Bias assoc with MS recovery low (-).
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?		•		see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3396

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		out for SD - see outlier report. Note 1,2-DICHLOROETHANE-D4 also above criteria in SN3396-5 but not on outlier report. Surr Summary does not match Form 2 in data package for 8260. ADR quals correct.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			both TBs ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?		•		see outlier report
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		6 analytes in 1 sample did not meet the requested RLs. See anomalies count report.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high bias for tert-butyl alcohol, carbon disulfide - assoc result ND. Low IS PR79-WT-001-SD-01 - poss high bias for acetone. ICV high for ClEthane, carbon disulfide; assoc results ND. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		see outlier report
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report (values slightly diff than data package)
Was the MS/MSD RPD within project acceptance limits?		•		see outlier report
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3980

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3980
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-007-PW-01	SN3980-13		Field Sample/N	X		X	X		X		X			X		
PR79-WT-007-PW-01-F	SN3980-14		Field Sample/N					X		X		X				
PR79-WT-016-PW-01	SN3980-8		Field Sample/N	X		X	X		X		X			X		
PR79-WT-016-PW-01-F	SN3980-9		Field Sample/N					X		X		X				
PR79-WT-017-PW-01	SN3980-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-017-PW-01-F	SN3980-4		Field Sample/N					X		X		X				
PR79-WT-007-SD-01	SN3980-17	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-007-SD-01	SN3980-22	Solid	Field Sample/N		X		X									
PR79-WT-016-SD-01	SN3980-12	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-016-SD-01	SN3980-21	Solid	Field Sample/N		X		X									
PR79-WT-017-SD-01	SN3980-20	Solid	Field Sample/N		X		X									
PR79-WT-017-SD-01	SN3980-7	Solid	Field Sample/N			X	X		X				X	X	X	X
TB-08-SD-01	SN3980-1	Solid	Trip Blank/TB											X		
EB-03-SW-01	SN3980-18	Water	Equipment Blank/EB	X		X	X		X		X			X		
EB-03-SW-01-F	SN3980-19	Water	Equipment Blank/EB					X		X		X				
PR79-WT-007-SW-01	SN3980-15	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-007-SW-01-F	SN3980-16	Water	Field Sample/N					X		X		X				
PR79-WT-016-SW-01	SN3980-10	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-016-SW-01-F	SN3980-11	Water	Field Sample/N					X		X		X				
PR79-WT-017-SW-01	SN3980-5	Water	Field Sample/N	X		X	X		X		X			X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-007-PW-01	SN3980-13		Field Sample/N	X
PR79-WT-007-PW-01-F	SN3980-14		Field Sample/N	
PR79-WT-016-PW-01	SN3980-8		Field Sample/N	X
PR79-WT-016-PW-01-F	SN3980-9		Field Sample/N	
PR79-WT-017-PW-01	SN3980-3		Field Sample/N	X
PR79-WT-017-PW-01-F	SN3980-4		Field Sample/N	
PR79-WT-007-SD-01	SN3980-17	Solid	Field Sample/N	
PR79-WT-007-SD-01	SN3980-22	Solid	Field Sample/N	
PR79-WT-016-SD-01	SN3980-12	Solid	Field Sample/N	
PR79-WT-016-SD-01	SN3980-21	Solid	Field Sample/N	
PR79-WT-017-SD-01	SN3980-20	Solid	Field Sample/N	
PR79-WT-017-SD-01	SN3980-7	Solid	Field Sample/N	
TB-08-SD-01	SN3980-1	Solid	Trip Blank/TB	
EB-03-SW-01	SN3980-18	Water	Equipment Blank/EB	X
EB-03-SW-01-F	SN3980-19	Water	Equipment Blank/EB	
PR79-WT-007-SW-01	SN3980-15	Water	Field Sample/N	X
PR79-WT-007-SW-01-F	SN3980-16	Water	Field Sample/N	
PR79-WT-016-SW-01	SN3980-10	Water	Field Sample/N	X
PR79-WT-016-SW-01-F	SN3980-11	Water	Field Sample/N	
PR79-WT-017-SW-01	SN3980-5	Water	Field Sample/N	X

Data Validation Report for SN3980

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-017-SW-01-F	SN3980-6	Water	Field Sample/N					X		X		X				
TB-04-PW-01	SN3980-2	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-017-SW-01-F	SN3980-6	Water	Field Sample/N	
TB-04-PW-01	SN3980-2	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3980. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Equipment Blank
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 176 results (16.07%) out of the 1095 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

%solids -OK

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	VOA container history check - OK. Soil samples frozen w/i 48 hours.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Richard Purdy

Reviewed by Richard Purdy, Senior Scientist, AECOM

March 31, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278448-1 (LB)/ WG278448-1	Chrysene	0.04000	< 0.036	< 0.2	ug/l	U/None	L	
WG278448-1 (LB)/ WG278448-1	Benzo (k)fluoranthene	0.06700	< 0.049	< 0.2	ug/l	U/None	L	
WG278448-1 (LB)/ WG278448-1	Fluorene	0.07100	< 0.061	< 0.2	ug/l	U/None	L	
WG278448-1 (LB)/ WG278448-1	Acenaphthylene	0.09000	< 0.054	< 0.2	ug/l	U/None	L	
WG278448-1 (LB)/ WG278448-1	2-Methylnaphthalene	0.4100	< 0.077	< 0.2	ug/l	U/None	L	
WG278448-1 (LB)/ WG278448-1	Naphthalene	0.5800	< 0.064	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278458-1 (LB)/ WG278458-1	Fluoranthene	0.004100	< 0.0018	< 0.02	mg/kg	U/None	L	
WG278458-1 (LB)/ WG278458-1	Pyrene	0.004200	< 0.0021	< 0.02	mg/kg	U/None	L	
WG278458-1 (LB)/ WG278458-1	Phenanthrene	0.004900	< 0.0018	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-016-SD-01	N	Fluoranthene	0.0400	0.0220 J	0.0400 U		mg/kg	L
PR79-WT-016-SD-01	N	Phenanthrene	0.0400	0.0160 J	0.0200 U		mg/kg	L
PR79-WT-016-SD-01	N	Pyrene	0.0400	0.0340 J	0.0400 U		mg/kg	L
PR79-WT-017-SD-01	N	Fluoranthene	0.0370	0.0220 J	0.0370 U		mg/kg	L
PR79-WT-017-SD-01	N	Phenanthrene	0.0370	0.0150 J	0.0180 U		mg/kg	L
PR79-WT-017-SD-01	N	Pyrene	0.0370	0.0330 J	0.0370 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278448-2 (BS)/ WG278448-2	Naphthalene	117.5	43 - 114	10 - 114	percent	J/None	C	
WG278448-2 (BS)/ WG278448-2	Benzo(a)pyrene	41.45	53 - 120	10 - 120	percent	J/UJ	C	
WG278448-2 (BS)/ WG278448-2	Anthracene	44.55	53 - 119	10 - 119	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01	EB	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
EB-03-SW-01	EB	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-007-PW-01	N	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-007-PW-01	N	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-007-SW-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-WT-007-SW-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-WT-016-PW-01	N	Anthracene	0.200	0.0980 UL	0.0980 UJ		ug/l	C
PR79-WT-016-PW-01	N	Benzo(a)pyrene	0.200	0.0980 UL	0.0980 UJ		ug/l	C
PR79-WT-016-SW-01	N	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-016-SW-01	N	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-017-PW-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-WT-017-PW-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-WT-017-SW-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-WT-017-SW-01	N	Benzo(a)pyrene	0.200	0.0720 JL	0.0720 J		ug/l	C/I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-017-SW-01 (N)/ SN3980-5	2-Methylnaphthalene -d10	100.0	43 - 92	10 - 92	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-017-SW-01	N	Benzo(a)pyrene	0.200	0.0720 JL	0.0720 J		ug/l	C/I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01-F (EB)/ SN3980-19	Copper	0.8100	< 0.63	< 25	ug/l	U/None	V	
EB-03-SW-01-F (EB)/ SN3980-19	Zinc	0.8400	< 0.72	< 20	ug/l	U/None	V	
EB-03-SW-01-F (EB)/ SN3980-19	Aluminum	18.00	< 15	< 300	ug/l	U/None	V	
EB-03-SW-01-F (EB)/ SN3980-19	Potassium	190.0	< 41	< 1000	ug/l	U/None	V	
EB-03-SW-01-F (EB)/ SN3980-19	Calcium	42.00	< 11	< 100	ug/l	U/None	V	
EB-03-SW-01-F (EB)/ SN3980-19	Sodium	65.00	< 24	< 1000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-PW-01	N	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-WT-007-PW-01-F	N	Aluminum	300	217 J	300 U		ug/l	V
PR79-WT-007-PW-01-F	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-007-SW-01	N	Aluminum	300	130 J	300 U		ug/l	V
PR79-WT-007-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	V
PR79-WT-007-SW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	V
PR79-WT-007-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Copper	25.0	1.20 J	10.0 U		ug/l	V
PR79-WT-016-PW-01-F	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-016-PW-01-F	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-016-SW-01	N	Aluminum	300	110 J	300 U		ug/l	V
PR79-WT-016-SW-01	N	Copper	25.0	2.60 J	10.0 U		ug/l	V
PR79-WT-016-SW-01-F	N	Aluminum	300	100 J	100 U		ug/l	V
PR79-WT-016-SW-01-F	N	Copper	25.0	0.910 J	10.0 U		ug/l	V
PR79-WT-017-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V
PR79-WT-017-PW-01-F	N	Aluminum	300	239 J	300 U		ug/l	V
PR79-WT-017-PW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	V
PR79-WT-017-SW-01	N	Aluminum	300	259 J	300 U		ug/l	V
PR79-WT-017-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-017-SW-01-F	N	Aluminum	300	190 J	300 U		ug/l	V
PR79-WT-017-SW-01-F	N	Copper	25.0	2.00 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Field Blank

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01-F (FB)	Copper	0.8100	< 0.55	< 25	ug/l	None/U	F	
EB-03-SW-01-F (FB)	Aluminum	18.00	< 10	< 300	ug/l	None/U	F	
PBWNE27ICW2 (FB)	Zinc	0.8000	< 0.45	< 20	ug/l	None/U	F	
PBWNE27ICW2 (FB)	Potassium	130.0	< 10	< 300	ug/l	None/U	F	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27ICW2 (LB)	Zinc	0.8000	< 0.45	< 20	ug/l	None/U	L	
PBWNE27ICW2 (LB)	Potassium	130.0	< 73	< 1000	ug/l	None/U	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-PW-01-F	N	Potassium	1000	840 J	1000 U		ug/l	L
PR79-WT-007-PW-01-F	N	Zinc	20.0	3.50 J	10.0 U		ug/l	L
PR79-WT-007-SW-01-F	N	Potassium	1000	944 J	1000 U		ug/l	L
PR79-WT-007-SW-01-F	N	Zinc	20.0	4.20 J	10.0 U		ug/l	L
PR79-WT-016-PW-01-F	N	Potassium	1000	770 J	1000 U		ug/l	L
PR79-WT-016-PW-01-F	N	Zinc	20.0	3.30 J	10.0 U		ug/l	L
PR79-WT-016-SW-01-F	N	Potassium	1000	692 J	1000 U		ug/l	L
PR79-WT-016-SW-01-F	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L
PR79-WT-017-PW-01-F	N	Zinc	20.0	4.50 J	10.0 U		ug/l	L
PR79-WT-017-SW-01-F	N	Zinc	20.0	4.40 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Chromium	0.04700	< 0.026	< 1	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Zinc	0.2600	< 0.17	< 2	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Magnesium	1.000	< 0.68	< 10	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Aluminum	1.400	< 0.71	< 30	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Calcium	2.000	< 1.8	< 10	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Iron	3.000	< 1.4	< 10	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Sodium	5.200	< 1.5	< 100	mg/kg	U/None	L	
PBSNF03ICS1 (LB)/ PBSNF03ICS1	Potassium	8.000	< 2.9	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	Sodium	120	86.6 J	120 U		mg/kg	L
PR79-WT-016-SD-01	N	Sodium	180	95.9 J	180 U		mg/kg	L
PR79-WT-017-SD-01	N	Sodium	180	95.6 J	180 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01 (EB)/ SN3980-18	Vanadium	0.3700	< 0.23	< 10	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Chromium	0.4000	< 0.36	< 10	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Zinc	1.300	< 0.72	< 20	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Copper	1.600	< 0.63	< 25	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Magnesium	11.00	< 7.8	< 100	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Calcium	124.0	< 11	< 100	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Aluminum	17.00	< 15	< 300	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Potassium	250.0	< 41	< 1000	ug/l	U/None	V	
EB-03-SW-01 (EB)/ SN3980-18	Sodium	556.0	< 24	< 1000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-PW-01	N	Chromium	10.0	3.10 J	4.00 U		ug/l	V
PR79-WT-007-PW-01	N	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-WT-007-PW-01	N	Vanadium	10.0	4.14 J	10.0 U		ug/l	V
PR79-WT-007-PW-01-F	N	Aluminum	300	217 J	300 U		ug/l	V
PR79-WT-007-PW-01-F	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-007-SW-01	N	Aluminum	300	130 J	300 U		ug/l	V
PR79-WT-007-SW-01	N	Chromium	10.0	0.590 J	4.00 U		ug/l	V
PR79-WT-007-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	V
PR79-WT-007-SW-01	N	Vanadium	10.0	0.870 J	4.00 U		ug/l	V
PR79-WT-007-SW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	V
PR79-WT-007-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Chromium	10.0	4.22 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Copper	25.0	1.20 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Vanadium	10.0	5.57 J	10.0 U		ug/l	V
PR79-WT-016-PW-01-F	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-016-PW-01-F	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-016-SW-01	N	Aluminum	300	110 J	300 U		ug/l	V
PR79-WT-016-SW-01	N	Chromium	10.0	0.500 J	4.00 U		ug/l	V
PR79-WT-016-SW-01	N	Copper	25.0	2.60 J	10.0 U		ug/l	V
PR79-WT-016-SW-01-F	N	Aluminum	300	100 J	100 U		ug/l	V

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-016-SW-01-F	N	Copper	25.0	0.910 J	10.0 U		ug/l	V
PR79-WT-017-PW-01	N	Chromium	10.0	1.40 J	4.00 U		ug/l	V
PR79-WT-017-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V
PR79-WT-017-PW-01	N	Vanadium	10.0	0.760 J	4.00 U		ug/l	V
PR79-WT-017-PW-01-F	N	Aluminum	300	239 J	300 U		ug/l	V
PR79-WT-017-PW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	V
PR79-WT-017-SW-01	N	Aluminum	300	259 J	300 U		ug/l	V
PR79-WT-017-SW-01	N	Chromium	10.0	0.790 J	4.00 U		ug/l	V
PR79-WT-017-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-017-SW-01	N	Vanadium	10.0	0.400 J	4.00 U		ug/l	V
PR79-WT-017-SW-01-F	N	Aluminum	300	190 J	300 U		ug/l	V
PR79-WT-017-SW-01-F	N	Copper	25.0	2.00 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Field Blank

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01 (FB)	Vanadium	0.3700	< 0.53	< 10	ug/l	None/U	F	
EB-03-SW-01 (FB)	Copper	1.600	< 0.55	< 25	ug/l	None/U	F	
EB-03-SW-01 (FB)	Aluminum	17.00	< 10	< 300	ug/l	None/U	F	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27ICW1 (LB)/ PBWNE27ICW1	Vanadium	0.7400	< 0.23	< 10	ug/l	U/None	L	
PBWNE27ICW1 (LB)/ PBWNE27ICW1	Iron	12.00	< 5.4	< 100	ug/l	U/None	L	
PBWNE27ICW2 (LB)/ PBWNE27ICW2	Zinc	0.8000	< 0.72	< 20	ug/l	U/None	L	
PBWNE27ICW2 (LB)/ PBWNE27ICW2	Potassium	130.0	< 41	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01	EB	Vanadium	10.0	0.370 J	4.00 U		ug/l	L
PR79-WT-007-PW-01	N	Zinc	20.0	5.40 J	10.0 U		ug/l	L
PR79-WT-007-SW-01	N	Potassium	1000	993 J	1000 U		ug/l	L
PR79-WT-007-SW-01	N	Zinc	20.0	2.50 J	10.0 U		ug/l	L
PR79-WT-016-PW-01	N	Zinc	20.0	9.57 J	10.0 U		ug/l	L
PR79-WT-016-SW-01	N	Potassium	1000	683 J	1000 U		ug/l	L
PR79-WT-016-SW-01	N	Zinc	20.0	3.80 J	10.0 U		ug/l	L
PR79-WT-017-PW-01	N	Zinc	20.0	4.70 J	10.0 U		ug/l	L
PR79-WT-017-SW-01	N	Zinc	20.0	2.80 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01-F (EB)/ SN3980-19	Beryllium	0.03800	< 0.034	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27IMW2 (LB)	Beryllium	0.04600	< 0.0077	< 0.2	ug/l	None/U	L	
PBWNE27IMW2 (LB)	Lead	0.1600	< 0.0049	< 0.2	ug/l	None/U	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01-F	EB	Beryllium	1.00	0.0380 J	0.200 U		ug/l	L
PR79-WT-007-PW-01-F	N	Beryllium	1.00	0.0720 J	0.200 U		ug/l	L
PR79-WT-007-PW-01-F	N	Lead	1.00	0.170 J	0.500 U		ug/l	L
PR79-WT-007-SW-01-F	N	Beryllium	1.00	0.120 J	0.200 U		ug/l	L
PR79-WT-007-SW-01-F	N	Lead	1.00	0.290 J	0.500 U		ug/l	L
PR79-WT-016-PW-01-F	N	Beryllium	1.00	0.0830 J	0.200 U		ug/l	L
PR79-WT-016-PW-01-F	N	Lead	1.00	0.0900 J	0.500 U		ug/l	L
PR79-WT-016-SW-01-F	N	Beryllium	1.00	0.190 J	0.200 U		ug/l	L
PR79-WT-016-SW-01-F	N	Lead	1.00	0.300 J	0.500 U		ug/l	L
PR79-WT-017-PW-01-F	N	Beryllium	1.00	0.0590 J	0.200 U		ug/l	L
PR79-WT-017-PW-01-F	N	Lead	1.00	0.730 J	1.00 U		ug/l	L
PR79-WT-017-SW-01-F	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-017-SW-01-F	N	Lead	1.00	0.560 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNF03IMS1 (LB)/ PBSNF03IMS1	Cobalt	0.01400	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01 (EB)/ SN3980-18	Beryllium	0.03800	< 0.034	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE27IMW1 (LB)/ PBWNE27IMW1	Beryllium	0.05700	< 0.034	< 1	ug/l	U/None	L	
PBWNE27IMW2 (LB)/ PBWNE27IMW2	Beryllium	0.04600	< 0.034	< 1	ug/l	U/None	L	
PBWNE27IMW2 (LB)/ PBWNE27IMW2	Lead	0.1600	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01	EB	Beryllium	1.00	0.0380 J	0.200 U		ug/l	L
PR79-WT-007-PW-01	N	Beryllium	1.00	0.200 J	0.200 U		ug/l	L
PR79-WT-007-SW-01	N	Beryllium	1.00	0.0930 J	0.200 U		ug/l	L
PR79-WT-007-SW-01	N	Lead	1.00	0.330 J	0.500 U		ug/l	L
PR79-WT-016-PW-01	N	Beryllium	1.00	0.260 J	1.00 U		ug/l	L
PR79-WT-016-SW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-016-SW-01	N	Lead	1.00	0.0840 J	0.500 U		ug/l	L
PR79-WT-017-PW-01	N	Beryllium	1.00	0.130 J	0.200 U		ug/l	L
PR79-WT-017-SW-01	N	Beryllium	1.00	0.0980 J	0.200 U		ug/l	L
PR79-WT-017-SW-01	N	Lead	1.00	0.983 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNF11HGS2 (LB)/ PBSNF11HGS2	Mercury	0.006000	< 0.0052	< 0.033	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	Mercury	0.0370	0.0260 J	0.0370 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-SW-01 (EB)/ SN3980-18	Methylene chloride	1.900	< 1.1	< 5	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278838-2 (LB)/ WG278838-2	Methylene chloride	3.100	< 1.1	< 5	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278886-1 (BS)/ WG278886-1	1,3-Dichlorobenzene	74.00	77 - 121	10 - 121	percent	J/UJ	C	
WG278886-1 (BS)/ WG278886-1	1,2-Dichlorobenzene	76.00	78 - 121	10 - 121	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	1,2-Dichlorobenzene	0.00500	0.00250 UL	0.00250 UJ		mg/kg	C
PR79-WT-007-SD-01	N	1,3-Dichlorobenzene	0.00500	0.00250 UL	0.00250 UJ		mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-016-PW-01 (N)/ SN3980-8	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	118.0	85 - 114	10 - 114	percent	J/None	I	
PR79-WT-016-SW-01 (N)/ SN3980-10	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	116.0	85 - 114	10 - 114	percent	J/None	I	
PR79-WT-017-PW-01 (N)/ SN3980-3	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	119.0	85 - 114	10 - 114	percent	J/None	I	
PR79-WT-017-SW-01 (N)/ SN3980-5	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	118.0	85 - 114	10 - 114	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-007-SD-01 (N)/ SN3980-17	Dibromofluoromethane	129.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-016-SD-01 (N)/ SN3980-12	Dibromofluoromethane	122.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-016-SD-01 (N)/ SN3980-12	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	56.20	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-017-SD-01 (N)/ SN3980-7	Dibromofluoromethane	123.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-017-SD-01 (N)/ SN3980-7	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	56.30	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	Acetone	0.0250	0.00590 J	0.00590 J	+	mg/kg	I/TR
PR79-WT-016-SD-01	N	1,1,1-Trichloroethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,1-Dichloroethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,1-Dichloroethene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2,3-Trichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2,4-Trichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2,4-Trimethylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2-Dichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,3,5-Trimethylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,3-Dichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	2-Butanone (MEK)	0.0620	0.0940	0.0940 J		mg/kg	I
PR79-WT-016-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0620	0.0310 U	0.0310 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Acetone	0.0620	0.750	0.750 J		mg/kg	I
PR79-WT-016-SD-01	N	Benzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Bromodichloromethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Bromomethane	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Carbon disulfide	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Chloroethane	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Chloroform	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Chloromethane	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	cis-1,2-Dichloroethene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Dibromochloromethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Ethylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-016-SD-01	N	Isopropylbenzene (Cumene)	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	m,p-Xylene	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Methylene chloride	0.0620	0.0310 U	0.0310 UJ		mg/kg	I
PR79-WT-016-SD-01	N	n-Butylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	n-Propylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	o-Xylene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	sec-Butylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	tert-Butyl alcohol	0.0620	0.0310 U	0.0310 UJ		mg/kg	I
PR79-WT-016-SD-01	N	tert-Butylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Toluene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	trans-1,2-Dichloroethene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Trichloroethene (TCE)	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Vinyl chloride	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,1,1-Trichloroethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,1-Dichloroethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,1-Dichloroethene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2,3-Trichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2,4-Trichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2,4-Trimethylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2-Dichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,3,5-Trimethylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,3-Dichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	2-Butanone (MEK)	0.0650	0.0750	0.0750 J		mg/kg	I
PR79-WT-017-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0650	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Acetone	0.0650	0.460	0.460 J		mg/kg	I
PR79-WT-017-SD-01	N	Benzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Bromodichloromethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Bromomethane	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Carbon disulfide	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Chloroethane	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Chloroform	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Chloromethane	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	cis-1,2-Dichloroethene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Dibromochloromethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Ethylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Isopropylbenzene (Cumene)	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	m,p-Xylene	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Methylene chloride	0.0650	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-017-SD-01	N	n-Butylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-017-SD-01	N	n-Propylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	o-Xylene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	sec-Butylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	tert-Butyl alcohol	0.0650	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-017-SD-01	N	tert-Butylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Toluene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	trans-1,2-Dichloroethene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Trichloroethene (TCE)	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Vinyl chloride	0.0260	0.0130 U	0.0130 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-04-PW-01 (TB)/ SN3980-2	Methylene chloride	1.400	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-007-SD-01 (N)/ SN3980-17		117.8	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-016-SD-01 (N)/ SN3980-12		121.1	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-017-SD-01 (N)/ SN3980-7		122.6	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	pH	0.100	6.10	6.10 J	-	ph units	H2
PR79-WT-016-SD-01	N	pH	0.100	5.50	5.50 J	-	ph units	H2
PR79-WT-017-SD-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01	EB	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
EB-03-SW-01	EB	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-007-PW-01	N	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-007-PW-01	N	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-007-SW-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-WT-007-SW-01	N	Benzo(a)pyrene	0.200	0.100 UL	0.100 UJ		ug/l	C
PR79-WT-016-PW-01	N	Anthracene	0.200	0.0980 UL	0.0980 UJ		ug/l	C
PR79-WT-016-PW-01	N	Benzo(a)pyrene	0.200	0.0980 UL	0.0980 UJ		ug/l	C
PR79-WT-016-SW-01	N	Anthracene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-016-SW-01	N	Benzo(a)pyrene	0.190	0.0970 UL	0.0970 UJ		ug/l	C
PR79-WT-017-PW-01	N	Anthracene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-WT-017-PW-01	N	Benzo(a)pyrene	0.190	0.0960 UL	0.0960 UJ		ug/l	C
PR79-WT-017-SW-01	N	Benzo(a)pyrene	0.200	0.0720 JL	0.0720 J		ug/l	C/I/TR
PR79-WT-017-SW-01	N	Anthracene	0.200	0.100 UL	0.100 UJ		ug/l	C

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-016-SD-01	N	Fluoranthene	0.0400	0.0220 J	0.0400 U		mg/kg	L
PR79-WT-016-SD-01	N	Phenanthrene	0.0400	0.0160 J	0.0200 U		mg/kg	L
PR79-WT-016-SD-01	N	Pyrene	0.0400	0.0340 J	0.0400 U		mg/kg	L
PR79-WT-017-SD-01	N	Fluoranthene	0.0370	0.0220 J	0.0370 U		mg/kg	L
PR79-WT-017-SD-01	N	Phenanthrene	0.0370	0.0150 J	0.0180 U		mg/kg	L
PR79-WT-017-SD-01	N	Pyrene	0.0370	0.0330 J	0.0370 U		mg/kg	L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-PW-01-F	N	Potassium	1000	840 J	1000 U		ug/l	L
PR79-WT-007-PW-01-F	N	Zinc	20.0	3.50 J	10.0 U		ug/l	L
PR79-WT-007-PW-01-F	N	Aluminum	300	217 J	300 U		ug/l	V
PR79-WT-007-PW-01-F	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-007-SW-01-F	N	Potassium	1000	944 J	1000 U		ug/l	L
PR79-WT-007-SW-01-F	N	Zinc	20.0	4.20 J	10.0 U		ug/l	L
PR79-WT-007-SW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	V
PR79-WT-007-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-WT-016-PW-01-F	N	Potassium	1000	770 J	1000 U		ug/l	L
PR79-WT-016-PW-01-F	N	Zinc	20.0	3.30 J	10.0 U		ug/l	L
PR79-WT-016-PW-01-F	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-016-PW-01-F	N	Copper	25.0	1.40 J	10.0 U		ug/l	V
PR79-WT-016-SW-01-F	N	Potassium	1000	692 J	1000 U		ug/l	L
PR79-WT-016-SW-01-F	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L
PR79-WT-016-SW-01-F	N	Aluminum	300	100 J	100 U		ug/l	V

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-016-SW-01-F	N	Copper	25.0	0.910 J	10.0 U		ug/l	V
PR79-WT-017-PW-01-F	N	Zinc	20.0	4.50 J	10.0 U		ug/l	L
PR79-WT-017-PW-01-F	N	Aluminum	300	239 J	300 U		ug/l	V
PR79-WT-017-PW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	V
PR79-WT-017-SW-01-F	N	Zinc	20.0	4.40 J	10.0 U		ug/l	L
PR79-WT-017-SW-01-F	N	Aluminum	300	190 J	300 U		ug/l	V
PR79-WT-017-SW-01-F	N	Copper	25.0	2.00 J	10.0 U		ug/l	V

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	Sodium	120	86.6 J	120 U		mg/kg	L
PR79-WT-016-SD-01	N	Sodium	180	95.9 J	180 U		mg/kg	L
PR79-WT-017-SD-01	N	Sodium	180	95.6 J	180 U		mg/kg	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01	EB	Vanadium	10.0	0.370 J	4.00 U		ug/l	L
PR79-WT-007-PW-01	N	Zinc	20.0	5.40 J	10.0 U		ug/l	L
PR79-WT-007-PW-01	N	Chromium	10.0	3.10 J	4.00 U		ug/l	V
PR79-WT-007-PW-01	N	Vanadium	10.0	4.14 J	10.0 U		ug/l	V
PR79-WT-007-PW-01	N	Copper	25.0	2.40 J	10.0 U		ug/l	V
PR79-WT-007-SW-01	N	Potassium	1000	993 J	1000 U		ug/l	L
PR79-WT-007-SW-01	N	Zinc	20.0	2.50 J	10.0 U		ug/l	L
PR79-WT-007-SW-01	N	Chromium	10.0	0.590 J	4.00 U		ug/l	V
PR79-WT-007-SW-01	N	Vanadium	10.0	0.870 J	4.00 U		ug/l	V
PR79-WT-007-SW-01	N	Aluminum	300	130 J	300 U		ug/l	V
PR79-WT-007-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Zinc	20.0	9.57 J	10.0 U		ug/l	L
PR79-WT-016-PW-01	N	Chromium	10.0	4.22 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Vanadium	10.0	5.57 J	10.0 U		ug/l	V
PR79-WT-016-PW-01	N	Copper	25.0	1.20 J	10.0 U		ug/l	V
PR79-WT-016-SW-01	N	Potassium	1000	683 J	1000 U		ug/l	L
PR79-WT-016-SW-01	N	Zinc	20.0	3.80 J	10.0 U		ug/l	L
PR79-WT-016-SW-01	N	Chromium	10.0	0.500 J	4.00 U		ug/l	V
PR79-WT-016-SW-01	N	Aluminum	300	110 J	300 U		ug/l	V
PR79-WT-016-SW-01	N	Copper	25.0	2.60 J	10.0 U		ug/l	V
PR79-WT-017-PW-01	N	Zinc	20.0	4.70 J	10.0 U		ug/l	L
PR79-WT-017-PW-01	N	Chromium	10.0	1.40 J	4.00 U		ug/l	V
PR79-WT-017-PW-01	N	Vanadium	10.0	0.760 J	4.00 U		ug/l	V
PR79-WT-017-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V
PR79-WT-017-SW-01	N	Zinc	20.0	2.80 J	10.0 U		ug/l	L
PR79-WT-017-SW-01	N	Chromium	10.0	0.790 J	4.00 U		ug/l	V
PR79-WT-017-SW-01	N	Vanadium	10.0	0.400 J	4.00 U		ug/l	V

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-017-SW-01	N	Aluminum	300	259 J	300 U		ug/l	V
PR79-WT-017-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	V

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01-F	EB	Beryllium	1.00	0.0380 J	0.200 U		ug/l	L
PR79-WT-007-PW-01-F	N	Beryllium	1.00	0.0720 J	0.200 U		ug/l	L
PR79-WT-007-PW-01-F	N	Lead	1.00	0.170 J	0.500 U		ug/l	L
PR79-WT-007-SW-01-F	N	Beryllium	1.00	0.120 J	0.200 U		ug/l	L
PR79-WT-007-SW-01-F	N	Lead	1.00	0.290 J	0.500 U		ug/l	L
PR79-WT-016-PW-01-F	N	Beryllium	1.00	0.0830 J	0.200 U		ug/l	L
PR79-WT-016-PW-01-F	N	Lead	1.00	0.0900 J	0.500 U		ug/l	L
PR79-WT-016-SW-01-F	N	Beryllium	1.00	0.190 J	0.200 U		ug/l	L
PR79-WT-016-SW-01-F	N	Lead	1.00	0.300 J	0.500 U		ug/l	L
PR79-WT-017-PW-01-F	N	Beryllium	1.00	0.0590 J	0.200 U		ug/l	L
PR79-WT-017-PW-01-F	N	Lead	1.00	0.730 J	1.00 U		ug/l	L
PR79-WT-017-SW-01-F	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-017-SW-01-F	N	Lead	1.00	0.560 J	1.00 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-SW-01	EB	Beryllium	1.00	0.0380 J	0.200 U		ug/l	L
PR79-WT-007-PW-01	N	Beryllium	1.00	0.200 J	0.200 U		ug/l	L
PR79-WT-007-SW-01	N	Beryllium	1.00	0.0930 J	0.200 U		ug/l	L
PR79-WT-007-SW-01	N	Lead	1.00	0.330 J	0.500 U		ug/l	L
PR79-WT-016-PW-01	N	Beryllium	1.00	0.260 J	1.00 U		ug/l	L
PR79-WT-016-SW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-016-SW-01	N	Lead	1.00	0.0840 J	0.500 U		ug/l	L
PR79-WT-017-PW-01	N	Beryllium	1.00	0.130 J	0.200 U		ug/l	L
PR79-WT-017-SW-01	N	Beryllium	1.00	0.0980 J	0.200 U		ug/l	L
PR79-WT-017-SW-01	N	Lead	1.00	0.983 J	1.00 U		ug/l	L

Test Method: SW7471B Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	Mercury	0.0370	0.0260 J	0.0370 U		mg/kg	L

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	Acetone	0.0250	0.00590 J	0.00590 J	+	mg/kg	I/TR
PR79-WT-007-SD-01	N	1,2-Dichlorobenzene	0.00500	0.00250 UL	0.00250 UJ		mg/kg	C
PR79-WT-007-SD-01	N	1,3-Dichlorobenzene	0.00500	0.00250 UL	0.00250 UJ		mg/kg	C
PR79-WT-016-SD-01	N	1,1,1-Trichloroethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,1-Dichloroethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,1-Dichloroethene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-016-SD-01	N	1,2,3-Trichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2,4-Trichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2,4-Trimethylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,2-Dichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,3,5-Trimethylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	1,3-Dichlorobenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	2-Butanone (MEK)	0.0620	0.0940	0.0940 J		mg/kg	I
PR79-WT-016-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0620	0.0310 U	0.0310 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Acetone	0.0620	0.750	0.750 J		mg/kg	I
PR79-WT-016-SD-01	N	Benzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Bromodichloromethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Bromomethane	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Carbon disulfide	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Chloroethane	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Chloroform	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Chloromethane	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	cis-1,2-Dichloroethene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Dibromochloromethane	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Ethylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Isopropylbenzene (Cumene)	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	m,p-Xylene	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Methylene chloride	0.0620	0.0310 U	0.0310 UJ		mg/kg	I
PR79-WT-016-SD-01	N	n-Butylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	n-Propylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	o-Xylene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	sec-Butylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	tert-Butyl alcohol	0.0620	0.0310 U	0.0310 UJ		mg/kg	I
PR79-WT-016-SD-01	N	tert-Butylbenzene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Toluene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	trans-1,2-Dichloroethene	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Trichloroethene (TCE)	0.0120	0.00620 U	0.00620 UJ		mg/kg	I
PR79-WT-016-SD-01	N	Vinyl chloride	0.0250	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,1,1-Trichloroethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,1-Dichloroethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,1-Dichloroethene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2,3-Trichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2,4-Trichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2,4-Trimethylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,2-Dichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-017-SD-01	N	1,3,5-Trimethylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	1,3-Dichlorobenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	2-Butanone (MEK)	0.0650	0.0750	0.0750 J		mg/kg	I
PR79-WT-017-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0650	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Acetone	0.0650	0.460	0.460 J		mg/kg	I
PR79-WT-017-SD-01	N	Benzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Bromodichloromethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Bromomethane	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Carbon disulfide	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Chloroethane	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Chloroform	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Chloromethane	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	cis-1,2-Dichloroethene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Dibromochloromethane	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Ethylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Isopropylbenzene (Cumene)	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	m,p-Xylene	0.0260	0.0130 U	0.0130 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Methylene chloride	0.0650	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-017-SD-01	N	n-Butylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	n-Propylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	o-Xylene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	sec-Butylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	tert-Butyl alcohol	0.0650	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-017-SD-01	N	tert-Butylbenzene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Toluene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	trans-1,2-Dichloroethene	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Trichloroethene (TCE)	0.0130	0.00650 U	0.00650 UJ		mg/kg	I
PR79-WT-017-SD-01	N	Vinyl chloride	0.0260	0.0130 U	0.0130 UJ		mg/kg	I

Test Method: SW9045D	Extraction Method: METHOD							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-007-SD-01	N	pH	0.100	6.10	6.10 J	-	ph units	H2
PR79-WT-016-SD-01	N	pH	0.100	5.50	5.50 J	-	ph units	H2
PR79-WT-017-SD-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-007-PW-01-F	N	Aluminum	300	217 J	217 J	300 U	V
PR79-WT-007-PW-01-F	N	Copper	25.0	1.40 J	1.40 J	10.0 U	V
PR79-WT-007-PW-01-F	N	Potassium	1000	840 J	840 J	1000 U	L
PR79-WT-007-PW-01-F	N	Zinc	20.0	3.50 J	3.50 J	10.0 U	L
PR79-WT-007-SW-01-F	N	Aluminum	300	96.0 J	96.0 J	100 U	V
PR79-WT-007-SW-01-F	N	Copper	25.0	2.40 J	2.40 J	10.0 U	V
PR79-WT-007-SW-01-F	N	Potassium	1000	944 J	944 J	1000 U	L
PR79-WT-007-SW-01-F	N	Zinc	20.0	4.20 J	4.20 J	10.0 U	L
PR79-WT-016-PW-01-F	N	Aluminum	300	140 J	140 J	300 U	V
PR79-WT-016-PW-01-F	N	Copper	25.0	1.40 J	1.40 J	10.0 U	V
PR79-WT-016-PW-01-F	N	Potassium	1000	770 J	770 J	1000 U	L
PR79-WT-016-PW-01-F	N	Zinc	20.0	3.30 J	3.30 J	10.0 U	L
PR79-WT-016-SW-01-F	N	Aluminum	300	100 J	100 J	100 U	V
PR79-WT-016-SW-01-F	N	Copper	25.0	0.910 J	0.910 J	10.0 U	V
PR79-WT-016-SW-01-F	N	Potassium	1000	692 J	692 J	1000 U	L
PR79-WT-016-SW-01-F	N	Zinc	20.0	2.00 J	2.00 J	10.0 U	L
PR79-WT-017-PW-01-F	N	Aluminum	300	239 J	239 J	300 U	V
PR79-WT-017-PW-01-F	N	Copper	25.0	1.60 J	1.60 J	10.0 U	V
PR79-WT-017-PW-01-F	N	Zinc	20.0	4.50 J	4.50 J	10.0 U	L
PR79-WT-017-SW-01-F	N	Aluminum	300	190 J	190 J	300 U	V
PR79-WT-017-SW-01-F	N	Copper	25.0	2.00 J	2.00 J	10.0 U	V
PR79-WT-017-SW-01-F	N	Zinc	20.0	4.40 J	4.40 J	10.0 U	L

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-007-PW-01	N	Chromium	10.0	3.10 J	3.10 J	4.00 U	V
PR79-WT-007-PW-01	N	Copper	25.0	2.40 J	2.40 J	10.0 U	V
PR79-WT-007-PW-01	N	Vanadium	10.0	4.14 J	4.14 J	10.0 U	V
PR79-WT-007-SW-01	N	Aluminum	300	130 J	130 J	300 U	V
PR79-WT-007-SW-01	N	Chromium	10.0	0.590 J	0.590 J	4.00 U	V
PR79-WT-007-SW-01	N	Copper	25.0	1.10 J	1.10 J	10.0 U	V
PR79-WT-007-SW-01	N	Vanadium	10.0	0.870 J	0.870 J	4.00 U	V
PR79-WT-016-PW-01	N	Chromium	10.0	4.22 J	4.22 J	10.0 U	V
PR79-WT-016-PW-01	N	Copper	25.0	1.20 J	1.20 J	10.0 U	V
PR79-WT-016-PW-01	N	Vanadium	10.0	5.57 J	5.57 J	10.0 U	V
PR79-WT-016-SW-01	N	Aluminum	300	110 J	110 J	300 U	V
PR79-WT-016-SW-01	N	Chromium	10.0	0.500 J	0.500 J	4.00 U	V
PR79-WT-016-SW-01	N	Copper	25.0	2.60 J	2.60 J	10.0 U	V
PR79-WT-017-PW-01	N	Chromium	10.0	1.40 J	1.40 J	4.00 U	V
PR79-WT-017-PW-01	N	Copper	25.0	3.20 J	3.20 J	10.0 U	V
PR79-WT-017-PW-01	N	Vanadium	10.0	0.760 J	0.760 J	4.00 U	V

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-017-SW-01	N	Aluminum	300	259 J	259 J	300 U	V
PR79-WT-017-SW-01	N	Chromium	10.0	0.790 J	0.790 J	4.00 U	V
PR79-WT-017-SW-01	N	Copper	25.0	1.40 J	1.40 J	10.0 U	V
PR79-WT-017-SW-01	N	Vanadium	10.0	0.400 J	0.400 J	4.00 U	V

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
EB-03-SW-01-F	EB	Beryllium	1.00	0.0380 J	0.0380 J	0.200 U	L
PR79-WT-007-PW-01-F	N	Beryllium	1.00	0.0720 J	0.0720 J	0.200 U	L
PR79-WT-007-PW-01-F	N	Lead	1.00	0.170 J	0.170 J	0.500 U	L
PR79-WT-007-SW-01-F	N	Beryllium	1.00	0.120 J	0.120 J	0.200 U	L
PR79-WT-007-SW-01-F	N	Lead	1.00	0.290 J	0.290 J	0.500 U	L
PR79-WT-016-PW-01-F	N	Beryllium	1.00	0.0830 J	0.0830 J	0.200 U	L
PR79-WT-016-PW-01-F	N	Lead	1.00	0.0900 J	0.0900 J	0.500 U	L
PR79-WT-016-SW-01-F	N	Beryllium	1.00	0.190 J	0.190 J	0.200 U	L
PR79-WT-016-SW-01-F	N	Lead	1.00	0.300 J	0.300 J	0.500 U	L
PR79-WT-017-PW-01-F	N	Beryllium	1.00	0.0590 J	0.0590 J	0.200 U	L
PR79-WT-017-PW-01-F	N	Lead	1.00	0.730 J	0.730 J	1.00 U	L
PR79-WT-017-SW-01-F	N	Beryllium	1.00	0.110 J	0.110 J	0.200 U	L
PR79-WT-017-SW-01-F	N	Lead	1.00	0.560 J	0.560 J	1.00 U	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
F	Field Blank
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		no action required
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?			•	
Were LCS/LCSD recoveries within project acceptance limits?			•	
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report. Qualification required.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report, 2 MBs, soil and AQ - both had detected results - qualifications required.
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report - qualifications required.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		18 analytes in 3 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: ICAL 1,4-dioxane outside criteria, assoc results would be estimated. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report - sodium required qualifications for sediment samples. Vanadium, Potassium and Zinc required qualifications for Total samples. Potassium and Zinc required qualifications for the filtered samples.
Were target analytes in the field blank less than MDL?		•		see outlier report - Al, Cr, Cu, V required qualifications for Total samples. Al and Cu required qualifications for filtered samples. Calcium was detected above the RL in the EB for Total SW. All results were >5x the blank result - no action.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			MS/MSD was not submitted for soil sample.
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		2 analytes in 2 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3980

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. Be and Pb for Total and filtered samples required qualifications.
Were target analytes in the field blank less than MDL?		•		see outlier report
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			A soil MS/MSD was not submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		9 analytes in 3 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. Qualification required.
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with sample set.
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3980

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report - full scan - sediment samples required qualificatons.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see ADR report, no qualifications required.
Were target analytes in the field blank less than MDL?		•		VOC-SIM: TB-04-PW-01 - ND and EB-03-SW-01 - MeCl2 1.9J - no qualifications required.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report, Qualify 1,2-DCB and 1,3-DCB in sample -17 UJ.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		20 analytes in 2 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		ICV low for 124TCBz, assoc results in SN3980-1, -7, -12 may be biased low. ICV high for 11-DCA; assoc results ND. ICV high for 11-DCE; assoc results ND. CCV high for t-butyl alcohol, 11-DCE; assoc results ND. CCVs low for t-butyl alcohol: assoc results in SN3980-2, -3, -5, -8, -10, -18 may be biased low. Low Int Std CHLOROBENZENE-D5 and 1,4-DICHLOROBENZENE-D4 in PR79-WT-016-SD-01, PR79-WT-017-SD-01: assoc results ND and bias is high.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformances. C5500A - under-recovered 1,2,4-trichlorobenzene, T6075 - over-recovered 1,1-dicloroethane, W3177A - over-recovered 1,1-dichloroethene.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?		•		see outlier report. Qualifications required.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			3.0, 3.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3235_RE

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3235_RE
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-PW-FD04-01	SN3235-12		Field Duplicate/FD	X		X	X		X		X			X		
PR79-PW-FD04-01-F	SN3235-13		Field Duplicate/FD					X		X		X				
PR79-WT-033-PW-01	SN3235-10		Field Sample/N	X		X	X		X		X			X		
PR79-WT-033-PW-01-F	SN3235-11		Field Sample/N					X		X		X				
PR79-SD-FD04-01	SN3235-6	Solid	Field Duplicate/FD			X	X		X				X	X	X	X
PR79-SD-FD04-01	SN3235-7	Solid	Field Duplicate/FD		X		X									
PR79-WT-033-SD-01	SN3235-4	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-033-SD-01	SN3235-5	Solid	Field Sample/N		X		X									
TB-01-SDBG-01	SN3235-3	Solid	Trip Blank/TB											X		
PR79-SW-FD04-01	SN3235-14	Water	Field Duplicate/FD	X		X	X		X		X			X		
PR79-SW-FD04-01-F	SN3235-15	Water	Field Duplicate/FD					X		X		X				
PR79-WT-033-SW-01	SN3235-8	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-033-SW-01-F	SN3235-9	Water	Field Sample/N					X		X		X				
TB-01-PWBG-01	SN3235-2	Water	Trip Blank/TB											X		
TB-01-SWBG-01	SN3235-1	Water	Trip Blank/TB											X		

Data Validation Report for SN3235_RE

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-PW-FD04-01	SN3235-12		Field Duplicate/FD	X
PR79-PW-FD04-01-F	SN3235-13		Field Duplicate/FD	
PR79-WT-033-PW-01	SN3235-10		Field Sample/N	X
PR79-WT-033-PW-01-F	SN3235-11		Field Sample/N	
PR79-SD-FD04-01	SN3235-6	Solid	Field Duplicate/FD	
PR79-SD-FD04-01	SN3235-7	Solid	Field Duplicate/FD	
PR79-WT-033-SD-01	SN3235-4	Solid	Field Sample/N	
PR79-WT-033-SD-01	SN3235-5	Solid	Field Sample/N	
TB-01-SDBG-01	SN3235-3	Solid	Trip Blank/TB	
PR79-SW-FD04-01	SN3235-14	Water	Field Duplicate/FD	X
PR79-SW-FD04-01-F	SN3235-15	Water	Field Duplicate/FD	
PR79-WT-033-SW-01	SN3235-8	Water	Field Sample/N	X
PR79-WT-033-SW-01-F	SN3235-9	Water	Field Sample/N	
TB-01-PWBG-01	SN3235-2	Water	Trip Blank/TB	
TB-01-SWBG-01	SN3235-1	Water	Trip Blank/TB	

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3235_RE. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Extracted Internal Standard

Field Duplicate RPD

Lab Blank

Lab Replicate RPD

LCS Recovery

LCS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 74 results (10.36%) out of the 714 results (sample and field QC samples) reported are qualified based on review and 4 results (0.56%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG276641-2 (BS)/ WG276641-2	Pentachlorophenol	8.800	36 - 141	10 - 141	percent	J/X	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C
PR79-SW-FD04-01	FD	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C
PR79-WT-033-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C
PR79-WT-033-SW-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG276730-2 (BS)/ WG276730-2	1,4-Dioxane (p-Dioxane)	29.54	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.0590 U	0.0590 UJ		mg/kg	C
PR79-WT-033-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0570 U	0.0570 UJ		mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SW-FD04-01 (FD)/ SN3235-14	2-Methylnaphthalene -d10	95.80	43 - 92	10 - 92	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB_INE05A (CB)	Copper	0.6610	< 0.63	< 10	ug/l	None/None	B2	
CCB_INE05A (CB)	Potassium	113.9	< 41	< 500	ug/l	None/None	B2	
CCB_INE05A (CB)	Aluminum	16.40	< 15	< 100	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Copper	25.0	3.00 J	10.0 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Aluminum	300	186 J	300 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Copper	25.0	0.900 J	10.0 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Potassium	1000	980 J	1000 U		ug/l	B2/L
PR79-SW-FD04-01	FD	Aluminum	300	218 J	300 U		ug/l	B2
PR79-SW-FD04-01	FD	Copper	25.0	1.20 J	10.0 U		ug/l	B2
PR79-SW-FD04-01	FD	Potassium	1000	926 J	1000 U		ug/l	L/B2
PR79-SW-FD04-01-F	FD	Aluminum	300	163 J	300 U		ug/l	B2
PR79-SW-FD04-01-F	FD	Copper	25.0	1.30 J	10.0 U		ug/l	B2
PR79-SW-FD04-01-F	FD	Potassium	1000	876 J	1000 U		ug/l	B2/L
PR79-WT-033-PW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Aluminum	300	252 J	300 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Copper	25.0	0.750 J	10.0 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Potassium	1000	968 J	1000 U		ug/l	B2/L
PR79-WT-033-SW-01	N	Aluminum	300	217 J	300 U		ug/l	B2
PR79-WT-033-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	B2
PR79-WT-033-SW-01	N	Potassium	1000	928 J	1000 U		ug/l	L/B2
PR79-WT-033-SW-01-F	N	Aluminum	300	155 J	300 U		ug/l	B2
PR79-WT-033-SW-01-F	N	Copper	25.0	1.00 J	10.0 U		ug/l	B2
PR79-WT-033-SW-01-F	N	Potassium	1000	911 J	1000 U		ug/l	B2/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05ICW1 (LB)	Magnesium	11.00	< 7.8	< 80	ug/l	None/None	L	
PBWNE05ICW1 (LB)	Potassium	110.0	< 41	< 500	ug/l	None/None	L	
PBWNE05ICW1 (LB)	Sodium	31.00	< 24	< 500	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F	FD	Potassium	1000	980 J	1000 U		ug/l	B2/L
PR79-SW-FD04-01-F	FD	Potassium	1000	876 J	1000 U		ug/l	B2/L
PR79-WT-033-PW-01-F	N	Potassium	1000	968 J	1000 U		ug/l	B2/L
PR79-WT-033-SW-01-F	N	Potassium	1000	911 J	1000 U		ug/l	B2/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS1 (LB)/ PBSNE08ICS1	Zinc	0.001780	< 0.00052	< 0.0061	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSND30ICS1 (LB)/ PBSND30ICS1	Chromium	0.04000	< 0.026	< 1	mg/kg	U/None	L	
PBSND30ICS1 (LB)/ PBSND30ICS1	Zinc	0.1900	< 0.17	< 2	mg/kg	U/None	L	
PBSND30ICS1 (LB)/ PBSND30ICS1	Potassium	10.00	< 2.9	< 100	mg/kg	U/None	L	
PBSND30ICS1 (LB)/ PBSND30ICS1	Calcium	2.500	< 1.8	< 10	mg/kg	U/None	L	
PBSND30ICS1 (LB)/ PBSND30ICS1	Sodium	3.800	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	Sodium	63.0	35.6 J	63.0 U		mg/kg	L
PR79-WT-033-SD-01	N	Sodium	60.0	37.9 J	60.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB_IEN05A (CB)	Aluminum	16.40	< 15	< 100	ug/l	None/None	B2	
CCB_INE05A (CB)	Copper	0.6610	< 0.63	< 10	ug/l	None/None	B2	
CCB_INE05A (CB)	Potassium	113.9	< 41	< 500	ug/l	None/U	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Copper	25.0	3.00 J	10.0 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Aluminum	300	186 J	300 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Copper	25.0	0.900 J	10.0 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Potassium	1000	980 J	1000 U		ug/l	B2/L
PR79-SW-FD04-01	FD	Aluminum	300	218 J	300 U		ug/l	B2
PR79-SW-FD04-01	FD	Copper	25.0	1.20 J	10.0 U		ug/l	B2
PR79-SW-FD04-01	FD	Potassium	1000	926 J	1000 U		ug/l	L/B2
PR79-SW-FD04-01-F	FD	Aluminum	300	163 J	300 U		ug/l	B2
PR79-SW-FD04-01-F	FD	Copper	25.0	1.30 J	10.0 U		ug/l	B2
PR79-SW-FD04-01-F	FD	Potassium	1000	876 J	1000 U		ug/l	B2/L
PR79-WT-033-PW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Aluminum	300	252 J	300 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Copper	25.0	0.750 J	10.0 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Potassium	1000	968 J	1000 U		ug/l	B2/L
PR79-WT-033-SW-01	N	Aluminum	300	217 J	300 U		ug/l	B2
PR79-WT-033-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	B2
PR79-WT-033-SW-01	N	Potassium	1000	928 J	1000 U		ug/l	L/B2
PR79-WT-033-SW-01-F	N	Aluminum	300	155 J	300 U		ug/l	B2
PR79-WT-033-SW-01-F	N	Copper	25.0	1.00 J	10.0 U		ug/l	B2
PR79-WT-033-SW-01-F	N	Potassium	1000	911 J	1000 U		ug/l	B2/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-033-PW-01 (N)/ SN3235-12	Barium	11.40	< 5	< 5	ug/l	J/None	D3	
PR79-WT-033-PW-01 (N)/ SN3235-12	Aluminum	1810	< 300	< 300	ug/l	J/None	D3	
PR79-WT-033-PW-01 (N)/ SN3235-12	Magnesium	38.43	< 30	< 30	rpd	J/None	D3	
PR79-WT-033-PW-01 (N)/ SN3235-12	Iron	52.09	< 30	< 30	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Aluminum	300	2880	2880 J		ug/l	D3
PR79-PW-FD04-01	FD	Barium	5.00	26.2	26.2 J		ug/l	D3
PR79-PW-FD04-01	FD	Iron	100	4380	4380 J		ug/l	D3
PR79-PW-FD04-01	FD	Magnesium	100	1520	1520 J		ug/l	D3
PR79-WT-033-PW-01	N	Aluminum	300	1070	1070 J		ug/l	D3
PR79-WT-033-PW-01	N	Barium	5.00	14.8	14.8 J		ug/l	D3
PR79-WT-033-PW-01	N	Iron	100	2570	2570 J		ug/l	D3
PR79-WT-033-PW-01	N	Magnesium	100	1030	1030 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05ICW1 (LB)/ PBWNE05ICW1	Magnesium	11.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE05ICW1 (LB)/ PBWNE05ICW1	Potassium	110.0	< 41	< 1000	ug/l	U/None	L	
PBWNE05ICW1 (LB)/ PBWNE05ICW1	Sodium	31.00	< 24	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SW-FD04-01	FD	Potassium	1000	926 J	1000 U		ug/l	L/B2
PR79-WT-033-SW-01	N	Potassium	1000	928 J	1000 U		ug/l	L/B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05IMW1 (LB)	Cadmium	0.03800	< 0.029	< 0.2	ug/l	None/None	L	
PBWNE05IMW1 (LB)	Beryllium	0.1200	< 0.034	< 0.2	ug/l	None/None	L	
PBWNE05IMW1 (LB)	Selenium	0.2000	< 0.19	< 3	ug/l	None/None	L	
PBWNE05IMW1 (LB)	Lead	0.2800	< 0.075	< 0.5	ug/l	None/None	L	
PBWNE05IMW1 (LB)	Nickel	0.5700	< 0.15	< 1.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F	FD	Beryllium	1.00	0.0600 J	0.200 U		ug/l	L
PR79-PW-FD04-01-F	FD	Lead	1.00	0.360 J	0.500 U		ug/l	L
PR79-PW-FD04-01-F	FD	Nickel	2.00	0.230 J	1.20 U		ug/l	L
PR79-SW-FD04-01-F	FD	Beryllium	1.00	0.0490 J	0.200 U		ug/l	L
PR79-SW-FD04-01-F	FD	Lead	1.00	0.140 J	0.500 U		ug/l	L
PR79-WT-033-PW-01-F	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L
PR79-WT-033-PW-01-F	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-033-PW-01-F	N	Nickel	2.00	0.280 J	1.20 U		ug/l	L
PR79-WT-033-SW-01-F	N	Beryllium	1.00	0.0380 J	0.200 U		ug/l	L
PR79-WT-033-SW-01-F	N	Cadmium	1.00	0.0330 J	0.200 U		ug/l	L
PR79-WT-033-SW-01-F	N	Lead	1.00	0.140 J	0.500 U		ug/l	L
PR79-WT-033-SW-01-F	N	Nickel	2.00	0.600 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-033-PW-01 (N)/ SN3235-12	Lead	1.080	< 1	< 1	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Cadmium	0.03800	< 0.03	< 1	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Beryllium	0.1200	< 0.034	< 1	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Selenium	0.2000	< 0.19	< 5	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Lead	0.2800	< 0.074	< 1	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Nickel	0.5700	< 0.15	< 2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Beryllium	1.00	0.180 J	0.200 U		ug/l	L
PR79-SW-FD04-01	FD	Lead	1.00	0.230 J	0.500 U		ug/l	L
PR79-WT-033-PW-01	N	Beryllium	1.00	0.0440 J	0.200 U		ug/l	L
PR79-WT-033-PW-01	N	Nickel	2.00	1.20 J	1.20 U		ug/l	L
PR79-WT-033-SW-01	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-033-SW-01	N	Cadmium	1.00	0.0710 J	0.200 U		ug/l	L
PR79-WT-033-SW-01	N	Lead	1.00	0.330 J	0.500 U		ug/l	L
PR79-WT-033-SW-01	N	Nickel	2.00	0.830 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB_HNE01B (CB)	Mercury	-0.04100	< 0.016	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-SW-FD04-01-F	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-PW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-SW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB_HNE01B (CB)	Mercury	-0.04100	< 0.016	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-SW-FD04-01	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-PW-01	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-SW-01	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB_HNE01A (CB)	Mercury	-0.04400			ug/l	None/UJ	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	Mercury	0.0390	0.0200 U	0.0200 UJ		mg/kg	B3
PR79-WT-033-SD-01	N	Mercury	0.0350	0.0180 U	0.0180 UJ		mg/kg	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-PW-FD04-01 (FD)/ SN3235-12	1,2-Dichloroethane-d4	138.0	81 - 118	10 - 118	percent	J/None	I	
PR79-SW-FD04-01 (FD)/ SN3235-14	1,2-Dichloroethane-d4	136.0	81 - 118	10 - 118	percent	J/None	I	
PR79-WT-033-PW-01 (N)/ SN3235-10	1,2-Dichloroethane-d4	138.0	81 - 118	10 - 118	percent	J/None	I	
PR79-WT-033-SW-01 (N)/ SN3235-8	1,2-Dichloroethane-d4	129.0	81 - 118	10 - 118	percent	J/None	I	
TB-01-PWBG-01 (TB)/ SN3235-2	1,2-Dichloroethane-d4	122.0	81 - 118	10 - 118	percent	J/None	I	
TB-01-SWBG-01 (TB)/ SN3235-1	1,2-Dichloroethane-d4	122.0	81 - 118	10 - 118	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-033-SD-01 (N)/ SN3235-4	Dibromofluoromethane	127.0	78 - 119	10 - 119	percent	J/None	I	
TB-01-SDBG-01 (TB)/ SN3235-3	Dibromofluoromethane	126.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
TB-01-SDBG-01	TB	Acetone	0.0250	0.00700 J	0.00700 J	+	mg/kg	I/TR
TB-01-SDBG-01	TB	Carbon disulfide	0.00500	0.000940 J	0.000940 J	+	mg/kg	I/TR
TB-01-SDBG-01	TB	Methylene chloride	0.0250	0.00920 J	0.00920 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-SDBG-01 (TB)/ SN3235-3	Carbon disulfide	0.0009400	< 0.00078	< 0.005	mg/kg	U/None	T	
TB-01-SDBG-01 (TB)/ SN3235-3	Acetone	0.007000	< 0.0051	< 0.025	mg/kg	U/None	T	
TB-01-SDBG-01 (TB)/ SN3235-3	Methylene chloride	0.009200	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Trip Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	Acetone	0.0250	0.00930 J	0.0120 U		mg/kg	T
PR79-WT-033-SD-01	N	Acetone	0.0220	0.0110 J	0.0110 U		mg/kg	T
PR79-WT-033-SD-01	N	Carbon disulfide	0.00440	0.000990 J	0.00220 U		mg/kg	T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SD-FD04-01 (FD)/ SN3235-6		25.40	< 24	< 48	hours	J/UJ	H2	Prep to Test Exceeds UWL
PR79-WT-033-SD-01 (N)/ SN3235-4		25.33	< 24	< 48	hours	J/UJ	H2	Prep to Test Exceeds UWL
PR79-WT-033-SD-01 (N)/ WG276930-2		25.33	< 24	< 48	hours	J/UJ	H2	Prep to Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	pH	0.100	7.00	7.00 J	-	ph units	H2
PR79-WT-033-SD-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C
PR79-SW-FD04-01	FD	Pentachlorophenol	0.960	0.480 UL	0.480 R		ug/l	C
PR79-WT-033-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C
PR79-WT-033-SW-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.0590 U	0.0590 UJ		mg/kg	C
PR79-WT-033-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0570 U	0.0570 UJ		mg/kg	C

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F	FD	Aluminum	300	186 J	300 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Copper	25.0	0.900 J	10.0 U		ug/l	B2
PR79-PW-FD04-01-F	FD	Potassium	1000	980 J	1000 U		ug/l	B2/L
PR79-SW-FD04-01-F	FD	Aluminum	300	163 J	300 U		ug/l	B2
PR79-SW-FD04-01-F	FD	Copper	25.0	1.30 J	10.0 U		ug/l	B2
PR79-SW-FD04-01-F	FD	Potassium	1000	876 J	1000 U		ug/l	B2/L
PR79-WT-033-PW-01-F	N	Aluminum	300	252 J	300 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Copper	25.0	0.750 J	10.0 U		ug/l	B2
PR79-WT-033-PW-01-F	N	Potassium	1000	968 J	1000 U		ug/l	B2/L
PR79-WT-033-SW-01-F	N	Aluminum	300	155 J	300 U		ug/l	B2
PR79-WT-033-SW-01-F	N	Copper	25.0	1.00 J	10.0 U		ug/l	B2
PR79-WT-033-SW-01-F	N	Potassium	1000	911 J	1000 U		ug/l	B2/L

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Copper	25.0	3.00 J	10.0 U		ug/l	B2
PR79-PW-FD04-01	FD	Aluminum	300	2880	2880 J		ug/l	D3
PR79-PW-FD04-01	FD	Barium	5.00	26.2	26.2 J		ug/l	D3
PR79-PW-FD04-01	FD	Iron	100	4380	4380 J		ug/l	D3
PR79-PW-FD04-01	FD	Magnesium	100	1520	1520 J		ug/l	D3
PR79-SW-FD04-01	FD	Aluminum	300	218 J	300 U		ug/l	B2
PR79-SW-FD04-01	FD	Copper	25.0	1.20 J	10.0 U		ug/l	B2
PR79-SW-FD04-01	FD	Potassium	1000	926 J	1000 U		ug/l	L/B2
PR79-WT-033-PW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	B2
PR79-WT-033-PW-01	N	Aluminum	300	1070	1070 J		ug/l	D3
PR79-WT-033-PW-01	N	Barium	5.00	14.8	14.8 J		ug/l	D3
PR79-WT-033-PW-01	N	Iron	100	2570	2570 J		ug/l	D3
PR79-WT-033-PW-01	N	Magnesium	100	1030	1030 J		ug/l	D3
PR79-WT-033-SW-01	N	Aluminum	300	217 J	300 U		ug/l	B2
PR79-WT-033-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	B2

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-033-SW-01	N	Potassium	1000	928 J	1000 U		ug/l	L/B2

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	Sodium	63.0	35.6 J	63.0 U		mg/kg	L
PR79-WT-033-SD-01	N	Sodium	60.0	37.9 J	60.0 U		mg/kg	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F	FD	Beryllium	1.00	0.0600 J	0.200 U		ug/l	L
PR79-PW-FD04-01-F	FD	Lead	1.00	0.360 J	0.500 U		ug/l	L
PR79-PW-FD04-01-F	FD	Nickel	2.00	0.230 J	1.20 U		ug/l	L
PR79-SW-FD04-01-F	FD	Beryllium	1.00	0.0490 J	0.200 U		ug/l	L
PR79-SW-FD04-01-F	FD	Lead	1.00	0.140 J	0.500 U		ug/l	L
PR79-WT-033-PW-01-F	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L
PR79-WT-033-PW-01-F	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-033-PW-01-F	N	Nickel	2.00	0.280 J	1.20 U		ug/l	L
PR79-WT-033-SW-01-F	N	Beryllium	1.00	0.0380 J	0.200 U		ug/l	L
PR79-WT-033-SW-01-F	N	Cadmium	1.00	0.0330 J	0.200 U		ug/l	L
PR79-WT-033-SW-01-F	N	Lead	1.00	0.140 J	0.500 U		ug/l	L
PR79-WT-033-SW-01-F	N	Nickel	2.00	0.600 J	1.20 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Beryllium	1.00	0.180 J	0.200 U		ug/l	L
PR79-SW-FD04-01	FD	Lead	1.00	0.230 J	0.500 U		ug/l	L
PR79-WT-033-PW-01	N	Beryllium	1.00	0.0440 J	0.200 U		ug/l	L
PR79-WT-033-PW-01	N	Nickel	2.00	1.20 J	1.20 U		ug/l	L
PR79-WT-033-SW-01	N	Beryllium	1.00	0.110 J	0.200 U		ug/l	L
PR79-WT-033-SW-01	N	Cadmium	1.00	0.0710 J	0.200 U		ug/l	L
PR79-WT-033-SW-01	N	Lead	1.00	0.330 J	0.500 U		ug/l	L
PR79-WT-033-SW-01	N	Nickel	2.00	0.830 J	1.20 U		ug/l	L

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-SW-FD04-01-F	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-PW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-SW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3

Test Method: SW7470A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-SW-FD04-01	FD	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3

Table of All Qualified Results

Test Method: SW7470A	**Extraction Method: Total**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-033-PW-01	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3
PR79-WT-033-SW-01	N	Mercury	0.200	0.100 U	0.100 UJ		ug/l	B3

Test Method: SW7471B	**Extraction Method: METHOD**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	Mercury	0.0390	0.0200 U	0.0200 UJ		mg/kg	B3
PR79-WT-033-SD-01	N	Mercury	0.0350	0.0180 U	0.0180 UJ		mg/kg	B3

Test Method: SW8260C	**Extraction Method: SW5035**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	Acetone	0.0250	0.00930 J	0.0120 U		mg/kg	T
PR79-WT-033-SD-01	N	Acetone	0.0220	0.0110 J	0.0110 U		mg/kg	T
PR79-WT-033-SD-01	N	Carbon disulfide	0.00440	0.000990 J	0.00220 U		mg/kg	T
TB-01-SDBG-01	TB	Acetone	0.0250	0.00700 J	0.00700 J	+	mg/kg	I/TR
TB-01-SDBG-01	TB	Carbon disulfide	0.00500	0.000940 J	0.000940 J	+	mg/kg	I/TR
TB-01-SDBG-01	TB	Methylene chloride	0.0250	0.00920 J	0.00920 J	+	mg/kg	I/TR

Test Method: SW9045D	**Extraction Method: METHOD**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01	FD	pH	0.100	7.00	7.00 J	-	ph units	H2
PR79-WT-033-SD-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01	FD	Pentachlorophenol	0.960	0.480 UL	0.480 X	0.480 R	C
PR79-SW-FD04-01	FD	Pentachlorophenol	0.960	0.480 UL	0.480 X	0.480 R	C
PR79-WT-033-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 X	0.480 R	C
PR79-WT-033-SW-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 X	0.470 R	C

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01-F	FD	Aluminum	300	186 J	186 J	300 U	B2
PR79-PW-FD04-01-F	FD	Copper	25.0	0.900 J	0.900 J	10.0 U	B2
PR79-PW-FD04-01-F	FD	Potassium	1000	980 J	980 J	1000 U	B2/L
PR79-SW-FD04-01-F	FD	Aluminum	300	163 J	163 J	300 U	B2
PR79-SW-FD04-01-F	FD	Copper	25.0	1.30 J	1.30 J	10.0 U	B2
PR79-SW-FD04-01-F	FD	Potassium	1000	876 J	876 J	1000 U	B2/L
PR79-WT-033-PW-01-F	N	Aluminum	300	252 J	252 J	300 U	B2
PR79-WT-033-PW-01-F	N	Copper	25.0	0.750 J	0.750 J	10.0 U	B2
PR79-WT-033-PW-01-F	N	Potassium	1000	968 J	968 J	1000 U	B2/L
PR79-WT-033-SW-01-F	N	Aluminum	300	155 J	155 J	300 U	B2
PR79-WT-033-SW-01-F	N	Copper	25.0	1.00 J	1.00 J	10.0 U	B2
PR79-WT-033-SW-01-F	N	Potassium	1000	911 J	911 J	1000 U	B2/L

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01	FD	Copper	25.0	3.00 J	3.00 J	10.0 U	B2
PR79-SW-FD04-01	FD	Aluminum	300	218 J	218 J	300 U	B2
PR79-SW-FD04-01	FD	Copper	25.0	1.20 J	1.20 J	10.0 U	B2
PR79-SW-FD04-01	FD	Potassium	1000	926 J	1000 U	1000 U	L/B2
PR79-WT-033-PW-01	N	Copper	25.0	1.90 J	1.90 J	10.0 U	B2
PR79-WT-033-SW-01	N	Aluminum	300	217 J	217 J	300 U	B2
PR79-WT-033-SW-01	N	Copper	25.0	1.10 J	1.10 J	10.0 U	B2
PR79-WT-033-SW-01	N	Potassium	1000	928 J	1000 U	1000 U	L/B2

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01-F	FD	Beryllium	1.00	0.0600 J	0.0600 J	0.200 U	L
PR79-PW-FD04-01-F	FD	Lead	1.00	0.360 J	0.360 J	0.500 U	L
PR79-PW-FD04-01-F	FD	Nickel	2.00	0.230 J	0.230 J	1.20 U	L
PR79-SW-FD04-01-F	FD	Beryllium	1.00	0.0490 J	0.0490 J	0.200 U	L
PR79-SW-FD04-01-F	FD	Lead	1.00	0.140 J	0.140 J	0.500 U	L
PR79-WT-033-PW-01-F	N	Beryllium	1.00	0.0620 J	0.0620 J	0.200 U	L
PR79-WT-033-PW-01-F	N	Lead	1.00	0.500 J	0.500 J	0.500 U	L
PR79-WT-033-PW-01-F	N	Nickel	2.00	0.280 J	0.280 J	1.20 U	L
PR79-WT-033-SW-01-F	N	Beryllium	1.00	0.0380 J	0.0380 J	0.200 U	L

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-033-SW-01-F	N	Cadmium	1.00	0.0330 J	0.0330 J	0.200 U	L
PR79-WT-033-SW-01-F	N	Lead	1.00	0.140 J	0.140 J	0.500 U	L
PR79-WT-033-SW-01-F	N	Nickel	2.00	0.600 J	0.600 J	1.20 U	L

Modified Qualifiers for test method SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01	FD	Lead	1.00	2.41	2.41 J	2.41	
PR79-WT-033-PW-01	N	Lead	1.00	1.33	1.33 J	1.33	

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01-F	FD	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-SW-FD04-01-F	FD	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-033-PW-01-F	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-033-SW-01-F	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3

Modified Qualifiers for test method SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01	FD	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-SW-FD04-01	FD	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-033-PW-01	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-033-SW-01	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3

Modified Qualifiers for test method SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SD-FD04-01	FD	Mercury	0.0390	0.0200 U	0.0200 U	0.0200 UJ	B3
PR79-WT-033-SD-01	N	Mercury	0.0350	0.0180 U	0.0180 U	0.0180 UJ	B3

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SD-FD04-01	FD	Acetone	0.0250	0.00930 J	0.00930 J	0.0120 U	T
PR79-WT-033-SD-01	N	Acetone	0.0220	0.0110 J	0.0110 J	0.0110 U	T
PR79-WT-033-SD-01	N	Carbon disulfide	0.00440	0.000990 J	0.000990 J	0.00220 U	T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
B3	CCB - Neg
C	LCS Recovery
D3	Field Duplicate RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Mg detected in 6010 lab blank PBWNE051CW1. Results in associated samples >LOQ and >5x blank level; no actions.
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCs only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			see FD report - PW nd SW FD RPDs below criteria.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3235_RE

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			see FD outlier report - one FD pair; RPD acceptable.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		one surrogate recovered high in one SW sample; sample results all ND so no action.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Pentachlorophenol %R low in aqueous LCS; ND results rejected in four samples. 1,4-dioxane %R low in sediment LCS; ND results estimated in two sediment sample.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			see FD report - SW, PW, and SE FD pair RPDs ok.
Were QAPP specified laboratory PQLs achieved?		•		10 compounds in 2 samples did not meet PQLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			Pentachlorophenol recovery low in LCS. ND results rejected in four aqueous samples.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			ICVs associated with all samples meet criteria.
Were CCVs run at the required frequency and within acceptance criteria?	•			CCVs associated with all samples meet criteria.
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		CCB (5/5 at 23:11) actions for Cu (U/B2 in all total and filtered PW and SW samples), for K ((U/B2) in filtered samples PW-FD04-F, SW-FD04-F, 33-PW-F, and 33-SW-F), and for Al (U/B2 in PW-FD04-F, SW-FD04, SW-FD04-F, PW-33-F, SW-33, and SW-33-F) due to detections in associated CCB. Blank actions were manually applied for filtered samples.
Did the ICSA have any non-target interferents above the MDL?		•		
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Blank actions applied for Na in 2 sediment samples, for K in 2 SW (total) samples, and for K for 2 PW (filtered) and 2 SW (filtered) samples. ADR did not include filtered sample blank actions. Applied manually.
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS/LCSD submitted for sediment; LCS only submitted for AVS and total.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	No MS in this data set.
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			see outlier report. FDs submitted for PW (total and filtered), SW (total and filtered), and sediment. ADR applied actions for Al, Ba, Fe, and Mg for PW-FD04 / 33-PW (total) FD pair.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3235_RE

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		Qualifications (U/B2) applied for Pb in 33-SW-F, 33-PW-F, PW-FD04-F, and SW-FD04-F due to Pb detected in associated CCBs. Blank actions applied to filtered samples manually.
Did the ICSA have any non-target interferents above the MDL?		•		
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. Actions applied to total samples for Be, Cd, Ni, and Pb. Blank actions to filtered samples for same analytes applied manually.
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS submitted for total and LCS/LCSD submitted for 3050B.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			FDs submitted for SW, PW, and sediment samples. Criteria met. ADR applied actions for PW (total) FD pair for Pb due to RPD but ADR FD report shows that RPD ok due to RL check. Manually removed J / D3 qualifier and code for Pb results for PW FD pair (total).
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3235_RE

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		Negative drift in ICB and CCBs. Hg is ND in all total and filtered PW and SW samples. Qualified all PW and SW total and filtered sample results UJ/B3.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			See ADR FD report. Criteria met for PW and SW total and filtered FD pairs.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3235_RE

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		Negative drift of Hg in ICB/CCBs. Hg ND both sediment samples. Qualified ND results UJ/B3.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	No EBs in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			Both results ND.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report. Qualifications required due to high recoveries of DBFM in 33-SD and TB-SD. Detected acetone and carbon disulfide results in 33-SD and TB-SD are qualified +/I; however, acetone and carbon disulfide results subsequently negated (and +/I quals removed) in 33-SD due to TB contamination. Detected methylene chloride result in TB-SD also qualified +/I due to high recovery of DBFM.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		Acetone result in SD-FD04 and 33-SD qualified U/T and carbon disulfide result in 33-SD qualified U/T due to TB contamination. PW and SW TBs all ND.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			See ADR FD report; criteria met for all three FD pairs (PW, SW, sediment).
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Data Validation Report for SN3235_RE

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3235_RE

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		see outlier report. Sample to prep HT exceeded. Results in SD-FD04 and 33-SD qualified J/H2.
Was the Calibration within acceptance criteria?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	EB not in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		MS not in this data set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3236

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3236
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Waverly Braunstein, Senior Scientist
Date Submitted:	September 17, 2020

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6020A	SW7471B	SW8260C
PR79-SB-131-AS-01	SN3236-2	Solid	Field Sample/N	X	X	X	X	
PR79-SB-131-BS-01	SN3236-3	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-134-AS-01	SN3236-4	Solid	Field Sample/N	X	X	X	X	
PR79-SB-134-BS-01	SN3236-5	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-135-AS-01	SN3236-6	Solid	Field Sample/N	X	X	X	X	
PR79-SB-135-BS-01	SN3236-7	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-136-AS-01	SN3236-8	Solid	Field Sample/N	X	X	X	X	
PR79-SB-136-BS-01	SN3236-9	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-137-AS-01	SN3236-12	Solid	Field Sample/N	X	X	X	X	
PR79-SB-137-BS-01	SN3236-13	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-139-AS-01	SN3236-14	Solid	Field Sample/N	X	X	X	X	
PR79-SB-139-BS-01	SN3236-15	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-140-AS-01	SN3236-16	Solid	Field Sample/N	X	X	X	X	
PR79-SB-140-BS-01	SN3236-17	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-FD07-01	SN3236-11	Solid	Field Duplicate/FD	X	X	X	X	
PR79-SB-FD08-01	SN3236-10	Solid	Field Duplicate/FD	X	X	X	X	X
TB-01-SOBG-01	SN3236-1	Solid	Trip Blank/TB					X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3236. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 87 results (8.73%) out of the 996 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

COC - sample PR79-SB-139-BS-01 has nothing checked under analysis. Sample logged in for SVOA-SIM, metals, pH and VOA

Analytical Method	Data Reviewer Comment
BNASIM	Analyte list is PAHs and 1,4-dioxane only.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.

Kristin Rutherford

July 28, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Waverly Braunstein, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG276730-2 (BS)/ WG276730-2	1,4-Dioxane (p-Dioxane)	29.54	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-AS-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.0640 U	0.0640 UJ	-	mg/kg	C
PR79-SB-131-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-134-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0600 U	0.0600 UJ	-	mg/kg	C
PR79-SB-134-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 U	0.0530 UJ	-	mg/kg	C
PR79-SB-135-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0580 UMM	0.0580 UJ	-	mg/kg	M/C
PR79-SB-135-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-136-AS-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.00200 J	0.00200 J	-	mg/kg	C
PR79-SB-136-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-137-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 U	0.0550 UJ	-	mg/kg	C
PR79-SB-137-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-139-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0600 U	0.0600 UJ	-	mg/kg	C
PR79-SB-139-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 U	0.0560 UJ	-	mg/kg	C
PR79-SB-140-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00160 J	0.00160 J	-	mg/kg	C
PR79-SB-140-BS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00130 J	0.00130 J	-	mg/kg	C
PR79-SB-FD07-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.0620 U	0.0620 UJ	-	mg/kg	C
PR79-SB-FD08-01	FD	1,4-Dioxane (p-Dioxane)	0.110	0.0550 U	0.0550 UJ	-	mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-135-AS-01 (MS)/ WG276730-3	1,4-Dioxane (p-Dioxane)	22.81	30 - 150	10 - 150	percent	J/UJ	M	
PR79-SB-135-AS-01 (MS)/ WG276730-3	Benzo(a)pyrene	43.09	50 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-135-AS-01 (MS)/ WG276730-3	Anthracene	48.16	50 - 114	10 - 114	percent	J/UJ	M	
PR79-SB-135-AS-01 (MS)/ WG276730-3	Benzo (k)fluoranthene	55.77	56 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	1,4-Dioxane (p-Dioxane)	25.94	30 - 150	10 - 150	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Indeno(1,2,3-c,d)pyrene	36.32	49 - 130	10 - 130	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Benzo(a)pyrene	41.50	50 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Benzo (g,h,i)perylene	42.80	49 - 127	10 - 127	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Dibenz (a,h)anthracene	46.69	50 - 129	10 - 129	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Anthracene	49.29	50 - 114	10 - 114	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Chrysene	49.29	57 - 118	10 - 118	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Benzo (b)fluoranthene	51.88	53 - 128	10 - 128	percent	J/UJ	M	
PR79-SB-135-AS-01 (SD)/ WG276730-4	Benzo (k)fluoranthene	54.47	56 - 123	10 - 123	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-135-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0580 UMM	0.0580 UJ	-	mg/kg	M/C
PR79-SB-135-AS-01	N	Anthracene	0.0230	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(a)pyrene	0.0230	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(b)fluoranthene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(g,h,i)perylene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(k)fluoranthene	0.0230	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Chrysene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE07ICS1 (LB)/ PBSNE07ICS1	Barium	0.2930	< 0.025	< 0.5	mg/kg	U/None	L	
PBSNE07ICS1 (LB)/ PBSNE07ICS1	Magnesium	0.7900	< 0.68	< 10	mg/kg	U/None	L	
PBSNE07ICS1 (LB)/ PBSNE07ICS1	Sodium	13.00	< 1.5	< 100	mg/kg	U/None	L	
PBSNE07ICS1 (LB)/ PBSNE07ICS1	Iron	2.000	< 1.4	< 10	mg/kg	U/None	L	
PBSNE07ICS1 (LB)/ PBSNE07ICS1	Aluminum	2.200	< 0.71	< 30	mg/kg	U/None	L	
PBSNE07ICS1 (LB)/ PBSNE07ICS1	Potassium	9.800	< 2.9	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-AS-01	N	Sodium	110	77.4 J	110 U		mg/kg	L
PR79-SB-134-AS-01	N	Sodium	100	74.3 J	100 U		mg/kg	L
PR79-SB-135-AS-01	N	Sodium	90.0	58.8 J	90.0 U		mg/kg	L
PR79-SB-136-AS-01	N	Sodium	120	70.4 J	120 U		mg/kg	L
PR79-SB-136-BS-01	N	Sodium	100	88.7 J	100 U		mg/kg	L
PR79-SB-139-AS-01	N	Sodium	100	83.6 J	100 U		mg/kg	L
PR79-SB-140-AS-01	N	Sodium	70.0	57.5 J	70.0 U		mg/kg	L
PR79-SB-FD07-01	FD	Sodium	99.0	63.1 J	99.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-LNE08A 18:21 (CB)	Thallium	0.05100	< 0.0031	< 0.2	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-BS-01	N	Thallium	0.0920	0.0340 J	0.0370 UJ		mg/kg	B2/B3
PR79-SB-134-AS-01	N	Thallium	0.100	0.0660 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-135-AS-01	N	Thallium	0.0900	0.0750 J	0.0900 UJ		mg/kg	B2/B3
PR79-SB-135-BS-01	N	Thallium	0.0860	0.0640 J	0.0860 UJ		mg/kg	B2/B3
PR79-SB-136-BS-01	N	Thallium	0.100	0.0600 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-137-BS-01	N	Thallium	0.0690	0.0480 J	0.0690 UJ		mg/kg	B2/B3
PR79-SB-FD08-01	FD	Thallium	0.0890	0.0610 J	0.0890 UJ		mg/kg	B2/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-LNE08A 18:53 (CB)	Thallium	-0.005000	< 0.0031	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-BS-01	N	Thallium	0.0920	0.0340 J	0.0370 UJ		mg/kg	B2/B3
PR79-SB-134-AS-01	N	Thallium	0.100	0.0660 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-135-AS-01	N	Thallium	0.0900	0.0750 J	0.0900 UJ		mg/kg	B2/B3
PR79-SB-135-BS-01	N	Thallium	0.0860	0.0640 J	0.0860 UJ		mg/kg	B2/B3
PR79-SB-136-BS-01	N	Thallium	0.100	0.0600 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-137-BS-01	N	Thallium	0.0690	0.0480 J	0.0690 UJ		mg/kg	B2/B3
PR79-SB-FD08-01	FD	Thallium	0.0890	0.0610 J	0.0890 UJ		mg/kg	B2/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-136-AS-01 (N)/ SN3236-11	Beryllium	6.915	< 0	< 0	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE07IMS1 (LB)/ PBSNE07IMS1	Beryllium	0.005500	< 0.0041	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW7471B, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-HNE19A (CB)	Mercury	-0.03500	< 0.016	< 0.2	ug/l	None/None	B3	
ICB-HNE05A 16:41 (CB)	Mercury	-0.04700	< 0.016	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-AS-01	N	Mercury	0.0340	0.0250 J	0.0250 J	-	mg/kg	TR/B3
PR79-SB-131-BS-01	N	Mercury	0.0320	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-134-AS-01	N	Mercury	0.0330	0.0120 J	0.0120 J	-	mg/kg	TR/B3
PR79-SB-134-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-135-AS-01	N	Mercury	0.0340	0.00570 J	0.00570 J	-	mg/kg	TR/B3
PR79-SB-135-BS-01	N	Mercury	0.0360	0.0180 U	0.0180 UJ		mg/kg	B3
PR79-SB-136-AS-01	N	Mercury	0.0400	0.0150 J	0.0150 J	-	mg/kg	TR/B3
PR79-SB-136-BS-01	N	Mercury	0.0280	0.0140 U	0.0140 UJ		mg/kg	B3
PR79-SB-137-AS-01	N	Mercury	0.0310	0.00790 J	0.00790 J	-	mg/kg	TR/B3
PR79-SB-137-BS-01	N	Mercury	0.0340	0.0170 U	0.0170 UJ	-	mg/kg	B3
PR79-SB-139-AS-01	N	Mercury	0.0370	0.00940 J	0.00940 J	-	mg/kg	TR/B3
PR79-SB-139-BS-01	N	Mercury	0.0320	0.0160 U	0.0160 UJ	-	mg/kg	B3
PR79-SB-140-AS-01	N	Mercury	0.0420	0.0270 J	0.0270 J	-	mg/kg	TR/B3
PR79-SB-140-BS-01	N	Mercury	0.0320	0.00610 J	0.00610 J	-	mg/kg	TR/B3
PR79-SB-FD07-01	FD	Mercury	0.0360	0.0140 J	0.0140 J	-	mg/kg	TR/B3
PR79-SB-FD08-01	FD	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
	1,1-Dichloroethene					None/None	S	
	1,1,1-Trichloroethane					None/None	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-BS-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 UJ	+	mg/kg	S
PR79-SB-131-BS-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 UJ	+	mg/kg	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-131-BS-01 (N)/ SN3236-3	Dibromofluoromethane	136.0	78 - 119	10 - 119	percent	J/None	I	
PR79-SB-131-BS-01 (N)/ SN3236-3	1,2-Dichloroethane-d4	151.0	71 - 136	10 - 136	percent	J/None	I	
PR79-SB-139-BS-01 (N)/ SN3236-15	Dibromofluoromethane	120.0	78 - 119	10 - 119	percent	J/None	I	
PR79-SB-140-BS-01 (N)/ SN3236-17	Dibromofluoromethane	122.0	78 - 119	10 - 119	percent	J/None	I	
TB-01-SOBG-01 (TB)/ SN3236-1	Dibromofluoromethane	123.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-139-BS-01	N	Carbon disulfide	0.00450	0.000880 J	0.00220 UJ	+	mg/kg	I/T
PR79-SB-139-BS-01	N	Toluene	0.00450	0.00200 J	0.00200 J	+	mg/kg	I/TR
TB-01-SOBG-01	TB	Acetone	0.0250	0.00590 J	0.00590 J	+	mg/kg	I/TR
TB-01-SOBG-01	TB	Carbon disulfide	0.00500	0.000880 J	0.000880 J	+	mg/kg	I/TR
TB-01-SOBG-01	TB	Methylene chloride	0.0250	0.00960 J	0.00960 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-SOBG-01 (TB)/ SN3236-1	Carbon disulfide	0.0008800	< 0.00078	< 0.005	mg/kg	U/None	T	
TB-01-SOBG-01 (TB)/ SN3236-1	Acetone	0.005900	< 0.0051	< 0.025	mg/kg	U/None	T	
TB-01-SOBG-01 (TB)/ SN3236-1	Methylene chloride	0.009600	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Trip Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-BS-01	N	Acetone	0.0220	0.00620 J	0.0110 UJ	+	mg/kg	S/T
PR79-SB-131-BS-01	N	Carbon disulfide	0.00430	0.000800 J	0.00220 UJ	+	mg/kg	S/T
PR79-SB-134-BS-01	N	Acetone	0.0220	0.0150 J	0.0220 U		mg/kg	T
PR79-SB-137-BS-01	N	Acetone	0.0220	0.00670 J	0.0110 U		mg/kg	T
PR79-SB-139-BS-01	N	Acetone	0.0220	0.00540 J	0.0110 U		mg/kg	T
PR79-SB-139-BS-01	N	Carbon disulfide	0.00450	0.000880 J	0.00220 UJ	+	mg/kg	I/T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-AS-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.0640 U	0.0640 UJ	-	mg/kg	C
PR79-SB-131-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-134-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0600 U	0.0600 UJ	-	mg/kg	C
PR79-SB-134-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 U	0.0530 UJ	-	mg/kg	C
PR79-SB-135-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0580 UMM	0.0580 UJ	-	mg/kg	M/C
PR79-SB-135-AS-01	N	Anthracene	0.0230	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(a)pyrene	0.0230	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(b)fluoranthene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(g,h,i)perylene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Benzo(k)fluoranthene	0.0230	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Chrysene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0230	0.0120 UM	0.0120 UJ		mg/kg	M
PR79-SB-135-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-136-AS-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.00200 J	0.00200 J	-	mg/kg	C
PR79-SB-136-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-137-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 U	0.0550 UJ	-	mg/kg	C
PR79-SB-137-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 UJ	-	mg/kg	C
PR79-SB-139-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0600 U	0.0600 UJ	-	mg/kg	C
PR79-SB-139-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 U	0.0560 UJ	-	mg/kg	C
PR79-SB-140-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00160 J	0.00160 J	-	mg/kg	C
PR79-SB-140-BS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00130 J	0.00130 J	-	mg/kg	C
PR79-SB-FD07-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.0620 U	0.0620 UJ	-	mg/kg	C
PR79-SB-FD08-01	FD	1,4-Dioxane (p-Dioxane)	0.110	0.0550 U	0.0550 UJ	-	mg/kg	C

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-AS-01	N	Sodium	110	77.4 J	110 U		mg/kg	L
PR79-SB-134-AS-01	N	Sodium	100	74.3 J	100 U		mg/kg	L
PR79-SB-135-AS-01	N	Sodium	90.0	58.8 J	90.0 U		mg/kg	L
PR79-SB-136-AS-01	N	Sodium	120	70.4 J	120 U		mg/kg	L
PR79-SB-136-BS-01	N	Sodium	100	88.7 J	100 U		mg/kg	L
PR79-SB-139-AS-01	N	Sodium	100	83.6 J	100 U		mg/kg	L
PR79-SB-140-AS-01	N	Sodium	70.0	57.5 J	70.0 U		mg/kg	L
PR79-SB-FD07-01	FD	Sodium	99.0	63.1 J	99.0 U		mg/kg	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-BS-01	N	Thallium	0.0920	0.0340 J	0.0370 UJ		mg/kg	B2/B3
PR79-SB-134-AS-01	N	Thallium	0.100	0.0660 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-135-AS-01	N	Thallium	0.0900	0.0750 J	0.0900 UJ		mg/kg	B2/B3

Table of All Qualified Results

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-135-BS-01	N	Thallium	0.0860	0.0640 J	0.0860 UJ		mg/kg	B2/B3
PR79-SB-136-BS-01	N	Thallium	0.100	0.0600 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-137-BS-01	N	Thallium	0.0690	0.0480 J	0.0690 UJ		mg/kg	B2/B3
PR79-SB-FD08-01	FD	Thallium	0.0890	0.0610 J	0.0890 UJ		mg/kg	B2/B3

Test Method: SW7471B Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-AS-01	N	Mercury	0.0340	0.0250 J	0.0250 J	-	mg/kg	TR/B3
PR79-SB-131-BS-01	N	Mercury	0.0320	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-134-AS-01	N	Mercury	0.0330	0.0120 J	0.0120 J	-	mg/kg	TR/B3
PR79-SB-134-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-135-AS-01	N	Mercury	0.0340	0.00570 J	0.00570 J	-	mg/kg	TR/B3
PR79-SB-135-BS-01	N	Mercury	0.0360	0.0180 U	0.0180 UJ		mg/kg	B3
PR79-SB-136-AS-01	N	Mercury	0.0400	0.0150 J	0.0150 J	-	mg/kg	TR/B3
PR79-SB-136-BS-01	N	Mercury	0.0280	0.0140 U	0.0140 UJ		mg/kg	B3
PR79-SB-137-AS-01	N	Mercury	0.0310	0.00790 J	0.00790 J	-	mg/kg	TR/B3
PR79-SB-137-BS-01	N	Mercury	0.0340	0.0170 U	0.0170 UJ	-	mg/kg	B3
PR79-SB-139-AS-01	N	Mercury	0.0370	0.00940 J	0.00940 J	-	mg/kg	TR/B3
PR79-SB-139-BS-01	N	Mercury	0.0320	0.0160 U	0.0160 UJ	-	mg/kg	B3
PR79-SB-140-AS-01	N	Mercury	0.0420	0.0270 J	0.0270 J	-	mg/kg	TR/B3
PR79-SB-140-BS-01	N	Mercury	0.0320	0.00610 J	0.00610 J	-	mg/kg	TR/B3
PR79-SB-FD07-01	FD	Mercury	0.0360	0.0140 J	0.0140 J	-	mg/kg	TR/B3
PR79-SB-FD08-01	FD	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-131-BS-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 UJ	+	mg/kg	S
PR79-SB-131-BS-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 UJ	+	mg/kg	S
PR79-SB-131-BS-01	N	Acetone	0.0220	0.00620 J	0.0110 UJ	+	mg/kg	S/T
PR79-SB-131-BS-01	N	Carbon disulfide	0.00430	0.000800 J	0.00220 UJ	+	mg/kg	S/T
PR79-SB-134-BS-01	N	Acetone	0.0220	0.0150 J	0.0220 U		mg/kg	T
PR79-SB-137-BS-01	N	Acetone	0.0220	0.00670 J	0.0110 U		mg/kg	T
PR79-SB-139-BS-01	N	Acetone	0.0220	0.00540 J	0.0110 U		mg/kg	T
PR79-SB-139-BS-01	N	Carbon disulfide	0.00450	0.000880 J	0.00220 UJ	+	mg/kg	I/T
PR79-SB-139-BS-01	N	Toluene	0.00450	0.00200 J	0.00200 J	+	mg/kg	I/TR
TB-01-SOBG-01	TB	Acetone	0.0250	0.00590 J	0.00590 J	+	mg/kg	I/TR
TB-01-SOBG-01	TB	Carbon disulfide	0.00500	0.000880 J	0.000880 J	+	mg/kg	I/TR
TB-01-SOBG-01	TB	Methylene chloride	0.0250	0.00960 J	0.00960 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-131-AS-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.0640 U	0.0640 X	0.0640 UJ	C
PR79-SB-131-AS-01	N	Dibenz(a,h)anthracene	0.0260	0.0130 U	0.0130 U	0.0130 UJ	V1
PR79-SB-131-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 X	0.0540 UJ	C
PR79-SB-134-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0600 U	0.0600 X	0.0600 UJ	C
PR79-SB-134-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0530 U	0.0530 X	0.0530 UJ	C
PR79-SB-135-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0580 UMM	0.0580 X	0.0580 UJ	M/C
PR79-SB-135-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 X	0.0540 UJ	C
PR79-SB-136-AS-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.00200 J	0.00200 J	0.00200 J	C
PR79-SB-136-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 X	0.0540 UJ	C
PR79-SB-137-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 U	0.0550 X	0.0550 UJ	C
PR79-SB-137-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-137-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0540 U	0.0540 X	0.0540 UJ	C
PR79-SB-137-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-139-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0600 U	0.0600 X	0.0600 UJ	C
PR79-SB-139-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-139-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 U	0.0560 X	0.0560 UJ	C
PR79-SB-139-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-140-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00160 J	0.00160 J	0.00160 J	C
PR79-SB-140-AS-01	N	Dibenz(a,h)anthracene	0.0250	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-140-BS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00130 J	0.00130 J	0.00130 J	C
PR79-SB-140-BS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-FD07-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.0620 U	0.0620 X	0.0620 UJ	C
PR79-SB-FD07-01	FD	Dibenz(a,h)anthracene	0.0250	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-FD08-01	FD	1,4-Dioxane (p-Dioxane)	0.110	0.0550 U	0.0550 X	0.0550 UJ	C
PR79-SB-FD08-01	FD	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1

Modified Qualifiers for test method SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-131-BS-01	N	Thallium	0.0920	0.0340 J	0.0340 J	0.0370 UJ	B2/B3
PR79-SB-134-AS-01	N	Thallium	0.100	0.0660 J	0.0660 J	0.100 UJ	B2/B3
PR79-SB-135-AS-01	N	Thallium	0.0900	0.0750 J	0.0750 J	0.0900 UJ	B2/B3
PR79-SB-135-BS-01	N	Thallium	0.0860	0.0640 J	0.0640 J	0.0860 UJ	B2/B3
PR79-SB-136-AS-01	N	Beryllium	0.120	0.763	0.763 J	0.763	
PR79-SB-136-BS-01	N	Thallium	0.100	0.0600 J	0.0600 J	0.100 UJ	B2/B3
PR79-SB-137-BS-01	N	Thallium	0.0690	0.0480 J	0.0480 J	0.0690 UJ	B2/B3
PR79-SB-FD07-01	FD	Beryllium	0.0990	0.712	0.712 J	0.712	
PR79-SB-FD08-01	FD	Thallium	0.0890	0.0610 J	0.0610 J	0.0890 UJ	B2/B3

Modified Qualifiers for test method SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-131-AS-01	N	Mercury	0.0340	0.0250 J	0.0250 J	0.0250 J	TR/B3
PR79-SB-131-BS-01	N	Mercury	0.0320	0.0160 U	0.0160 U	0.0160 UJ	B3

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-134-AS-01	N	Mercury	0.0330	0.0120 J	0.0120 J	0.0120 J	TR/B3
PR79-SB-134-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 U	0.0160 UJ	B3
PR79-SB-135-AS-01	N	Mercury	0.0340	0.00570 J	0.00570 J	0.00570 J	TR/B3
PR79-SB-135-BS-01	N	Mercury	0.0360	0.0180 U	0.0180 U	0.0180 UJ	B3
PR79-SB-136-AS-01	N	Mercury	0.0400	0.0150 J	0.0150 J	0.0150 J	TR/B3
PR79-SB-136-BS-01	N	Mercury	0.0280	0.0140 U	0.0140 U	0.0140 UJ	B3
PR79-SB-137-AS-01	N	Mercury	0.0310	0.00790 J	0.00790 J	0.00790 J	TR/B3
PR79-SB-137-BS-01	N	Mercury	0.0340	0.0170 U	0.0170 U	0.0170 UJ	B3
PR79-SB-139-AS-01	N	Mercury	0.0370	0.00940 J	0.00940 J	0.00940 J	TR/B3
PR79-SB-139-BS-01	N	Mercury	0.0320	0.0160 U	0.0160 U	0.0160 UJ	B3
PR79-SB-140-AS-01	N	Mercury	0.0420	0.0270 J	0.0270 J	0.0270 J	TR/B3
PR79-SB-140-BS-01	N	Mercury	0.0320	0.00610 J	0.00610 J	0.00610 J	TR/B3
PR79-SB-FD07-01	FD	Mercury	0.0360	0.0140 J	0.0140 J	0.0140 J	TR/B3
PR79-SB-FD08-01	FD	Mercury	0.0310	0.0160 U	0.0160 U	0.0160 UJ	B3

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-131-BS-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 U	0.00220 UJ	S
PR79-SB-131-BS-01	N	1,1-Dichloroethane	0.00430	0.00220 U	0.00220 U	0.00220 UJ	S
PR79-SB-131-BS-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 U	0.00220 UJ	S
PR79-SB-131-BS-01	N	2-Butanone (MEK)	0.0220	0.0110 U	0.0110 U	0.0110 UJ	S
PR79-SB-131-BS-01	N	Acetone	0.0220	0.00620 J	0.00620 J	0.0110 UJ	S/T
PR79-SB-131-BS-01	N	Bromomethane	0.00860	0.00430 U	0.00430 U	0.00430 UJ	S
PR79-SB-131-BS-01	N	Carbon disulfide	0.00430	0.000800 J	0.000800 J	0.00220 UJ	S/T
PR79-SB-131-BS-01	N	Chloroethane	0.00860	0.00430 U	0.00430 U	0.00430 UJ	S
PR79-SB-131-BS-01	N	Chloroform	0.00430	0.00220 U	0.00220 U	0.00220 UJ	S
PR79-SB-131-BS-01	N	Chloromethane	0.00860	0.00430 U	0.00430 U	0.00430 UJ	S
PR79-SB-131-BS-01	N	cis-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 U	0.00220 UJ	S
PR79-SB-131-BS-01	N	Methylene chloride	0.0220	0.0110 U	0.0110 U	0.0110 UJ	S
PR79-SB-131-BS-01	N	tert-Butyl alcohol	0.0220	0.0110 U	0.0110 U	0.0110 UJ	S
PR79-SB-131-BS-01	N	trans-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 U	0.00220 UJ	S
PR79-SB-131-BS-01	N	Vinyl chloride	0.00860	0.00430 U	0.00430 U	0.00430 UJ	S
PR79-SB-134-BS-01	N	Acetone	0.0220	0.0150 J	0.0150 J	0.0220 U	T
PR79-SB-137-BS-01	N	Acetone	0.0220	0.00670 J	0.00670 J	0.0110 U	T
PR79-SB-139-BS-01	N	Acetone	0.0220	0.00540 J	0.00540 J	0.0110 U	T
PR79-SB-139-BS-01	N	Carbon disulfide	0.00450	0.000880 J	0.000880 J	0.00220 UJ	I/T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
B3	CCB - Neg
C	LCS Recovery
D3	Field Duplicate RPD
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
S	Internal standard
T	Trip Blank
TR	Trace Level Detect
V1	ICV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			Sample PR79-SB-139-BS-01 on original COC this sample was not checked for analysis. Later logged in for SVOC analysis.
Were samples preserved properly and received in good condition?	•			samples rcvd at 1.4C
Were holding times met?	•			sampled 4/27/2020, extracted 4/30/2020, analyzed 5/8 and 5/11/2020.
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		ICV: WG277405-8 analyzed with initial (5/11/2020) instrument GCMS-N, dibenzo (ah)anthracene. Qualify results J-/UJ
Were CCVs run at the required frequency and within acceptance criteria?		•		CCV analyzed 5/6/2020, instrument GCMS-N, pentachlorophenol 21.1%D, only LCS analyzed - no action.
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			WG276730-1 - ND
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	FB not submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			WG276730-2
Were LCS/LCSD recoveries within project acceptance limits?		•		LCS only. See outlier report
Was the LCS/LCSD RPD within project acceptance limits?		•	•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-SB-135-AS-01
Were MS/MSD recoveries within project acceptance limits?		•		1,4-dioxane, anthracene, chrysene, benzo (b)fluoranthene, benzo(k)fluoranthene, benzo (a)pyrene, indeno(123cd)pyrene, dibenzo (ah)anthracene, benzo(ghi)perylene under - recovered. Qualify results (J-/UJ).
Was the MS/MSD RPD within project acceptance limits?		•		See outliers. Native sample ND - no quals
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-136-BS-01 / PR79-SB-FD08-01 and PR79-SB-136-AS-01 / PR79-SB-FD07-01
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV had a nonconformance, samples not reanalyzed

Data Validation Report for SN3236

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Were any data rejected during the verification process?		•		

Data Validation Report for SN3236

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		COC - sample PR79-SB-139-BS-01 has nothing checked under analysis. Sample logged in for SVOA-SIM, metals, pH and VOA
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			sampled 4/27/2020, analyzed 5/11/2020
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		Qualification not required
Did the ICSA have any non-target interferents above the MDL?	•			Cr, Ni, K, Na, Zn were all detected above the MDL. Na was qualified J+ in samples -08 (PR79-SB-136-AS-01 and -11 (PR79-SB-FD07-01) due to interference. Subsequently, results for Na were blank qualified - no action necessary.
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	A FB was not submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-136-AS-01 / PR79-SB-FD07-01 PR79-SB-136-BS-01 / PR79-SB-FD08-01
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3236

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		COC - sample PR79-SB-139-BS-01 has nothing checked under analysis. Sample logged in for SVOA-SIM, metals, pH and VOA
Were samples preserved properly and received in good condition?	•			Samples received at 1.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		ICB and CCBs have a number of analytes detected. See outliers. Qualifications were required.
Did the ICSA have any non-target interferents above the MDL?	•			
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Be = 0.0055J mg/Kg, qualifications were not required.
Were target analytes in the field blank less than MDL?			•	FB not submitted with the samples set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	MS/MSD not submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	none submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?		•		10 analytes in 4 SW3050B samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		COC - sample PR79-SB-139-BS-01 has nothing checked under analysis. Sample logged in for SVOA-SIM, metals, pH and VOA
Were samples preserved properly and received in good condition?	•			Samples received at 1.4C
Were holding times met?	•			Sampled 4/27/2020, digested 5/5, 5/18/2020, analyzed 5/5, 5/19/2020
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?		•		CCB 5/5/20 and CCB 5/19/20 negative drift. Qualify associated samples J-/UJ all associated samples.
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	FB not submitted with sample set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-SB-136 and PR79-SB-139
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-136-BS-01 / PR79-SB-FD08-01 and PR79-SB-136-AS-01 / PR79-SB-FD07-01
Were QAPP specified laboratory PQLs achieved?		•		15 analytes in 15 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		COC - sample PR79-SB-139-BS-01 has nothing checked under analysis. Sample logged in for SVOA-SIM, metals, pH and VOA
Were samples preserved properly and received in good condition?	•			samples received 1.4C - no issues
Were holding times met?	•			sampled 4/27/2020, analyzed 4/29, 4/30 and 5/1/2020
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were Internal Standard retention times and area criteria within method requirements?		•		Pentafluorobenzene -3, -3RA, 1,4-Difluorobenzene -3RA, Chlorobenzene-d5 -3RA, 1, 4-Dichlorobenzene-d4 -3RA under-recovered J/UJ.
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		see outliers. Qualifications were required.
Was a method blank prepared and analyzed with each batch?	•			WG276636-2
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB-01-SOBG-01 CS2 0.88J ug/Kg, MeCl2 9.6J ug/Kg, Acetone 5.9J ug/Kg. Adjusted LOQ 5, 25 and 25 respectively.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			batch QC
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-FD08-01 and PR79-SB-136-BS-01
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3271

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3271
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Waverly Braunstein, Senior Scientist
Date Submitted:	December 02, 2020

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6020A	SW7471B	SW8260C
PR79-SB-122-AS-01	SN3271-1	Solid	Field Sample/N	X	X	X	X	
PR79-SB-122-BS-01	SN3271-2	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-123-AS-01	SN3271-3	Solid	Field Sample/N	X	X	X	X	
PR79-SB-123-BS-01	SN3271-4	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-125-AS-01	SN3271-5	Solid	Field Sample/N	X	X	X	X	
PR79-SB-125-BS-01	SN3271-6	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-127-AS-01	SN3271-7	Solid	Field Sample/N	X	X	X	X	
PR79-SB-127-BS-01	SN3271-8	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-129-AS-01	SN3271-15	Solid	Field Sample/N	X	X	X	X	
PR79-SB-129-BS-01	SN3271-16	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-132-AS-01	SN3271-9	Solid	Field Sample/N	X	X	X	X	
PR79-SB-132-BS-01	SN3271-10	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-133-AS-01	SN3271-11	Solid	Field Sample/N	X	X	X	X	
PR79-SB-133-BS-01	SN3271-12	Solid	Field Sample/N	X	X	X	X	X
PR79-SB-138-AS-01	SN3271-13	Solid	Field Sample/N	X	X	X	X	
PR79-SB-138-BS-01	SN3271-14	Solid	Field Sample/N	X	X	X	X	X
TB-01-SOBG-01-0427	SN3271-17	Solid	Trip Blank/TB					X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3271. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 111 results (11.14%) out of the 996 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	ICB/CCB addressed under method blank review.
SW8260C	No additional comments; see Checklist for detail.

Kristin Rutherford

July 07, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Waverly Braunstein, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277405-9 (CV)	Dibenz (a,h)anthracene	72.00	80 - 120	50 - 150	percent	J/UJ	V2	
WG277405-9 (CV)	Indeno(1,2,3-c,d)pyrene	72.40	80 - 120	50 - 150	percent	J/UJ	V2	
WG277405-9 (CV)	Pyrene	75.10	80 - 120	50 - 150	percent	J/UJ	V2	
WG277489-2 (CV)	Pyrene	134.7	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Dibenz(a,h)anthracene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V1/V2
PR79-SB-122-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V2
PR79-SB-122-AS-01	N	Pyrene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V2
PR79-SB-122-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1/V2
PR79-SB-122-BS-01	N	Indeno(1,2,3-c,d)pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-122-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-123-AS-01	N	Pyrene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-123-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-125-AS-01	N	Pyrene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V2
PR79-SB-125-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-127-AS-01	N	Pyrene	0.0230	0.0120 U	0.0120 UJ		mg/kg	V2
PR79-SB-127-BS-01	N	Pyrene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-129-AS-01	N	Pyrene	0.0240	0.00320 J	0.00320 J		mg/kg	TR/V2
PR79-SB-129-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-132-AS-01	N	Pyrene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V2
PR79-SB-132-BS-01	N	Pyrene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-133-AS-01	N	Pyrene	0.0230	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-133-BS-01	N	Pyrene	0.0180	0.00900 U	0.00900 UJ		mg/kg	V2
PR79-SB-138-AS-01	N	Pyrene	0.0220	0.00820 J	0.00820 J		mg/kg	TR/V2
PR79-SB-138-BS-01	N	Pyrene	0.0200	0.0100 U	0.0100 UJ		mg/kg	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277405-8 (IV)	Dibenz (a,h)anthracene	79.39	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Dibenz(a,h)anthracene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V1/V2
PR79-SB-122-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1/V2
PR79-SB-123-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-123-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-125-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-125-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-127-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-127-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-129-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-129-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-132-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-132-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-133-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-133-BS-01	N	Dibenz(a,h)anthracene	0.0180	0.00900 U	0.00900 UJ		mg/kg	V1
PR79-SB-138-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-138-BS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 U	0.0100 UJ		mg/kg	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-AS-01 (MS)/ WG276803-3	Indeno(1,2,3-c,d)pyrene	35.43	49 - 130	10 - 130	percent	J/UJ	M	
PR79-SB-129-AS-01 (SD)/ WG276803-4	1,4-Dioxane (p-Dioxane)	29.40	30 - 150	10 - 150	percent	J/UJ	M	
PR79-SB-129-AS-01 (SD)/ WG276803-4	Indeno(1,2,3-c,d)pyrene	36.24	49 - 130	10 - 130	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0240	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-129-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00210 J	0.00210 J	-	mg/kg	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB HNE19A (CB)	Sodium	-96.19			ug/l	J/UJ	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Sodium	110	74.3 J	110 UJ		mg/kg	L/B3
PR79-SB-133-AS-01	N	Sodium	89.0	41.6 J	44.0 UJ		mg/kg	L/B3
PR79-SB-138-AS-01	N	Sodium	88.0	56.6 J	88.0 UJ		mg/kg	L/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Lead	0.09800	< 0.087	< 0.5	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Aluminum	1.000	< 0.71	< 30	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Potassium	13.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Sodium	2.800	< 1.5	< 100	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Calcium	4.000	< 1.8	< 10	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Nickel	0.05000	< 0.044	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Chromium	0.07400	< 0.026	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Magnesium	1.500	< 0.68	< 10	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Potassium	20.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Sodium	6.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Sodium	85.0	50.2 J	85.0 U		mg/kg	L
PR79-SB-123-AS-01	N	Sodium	100	66.9 J	100 U		mg/kg	L
PR79-SB-125-AS-01	N	Sodium	120	54.1 J	58.0 U		mg/kg	L
PR79-SB-125-BS-01	N	Sodium	120	64.2 J	120 U		mg/kg	L
PR79-SB-127-BS-01	N	Sodium	91.0	77.0 J	91.0 U		mg/kg	L
PR79-SB-129-AS-01	N	Sodium	110	74.3 J	110 UJ		mg/kg	L/B3
PR79-SB-132-AS-01	N	Sodium	98.0	50.2 J	98.0 U		mg/kg	L
PR79-SB-133-AS-01	N	Sodium	89.0	41.6 J	44.0 UJ		mg/kg	L/B3
PR79-SB-138-AS-01	N	Sodium	88.0	56.6 J	88.0 UJ		mg/kg	L/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Aluminum	-1381	74 - 119	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Magnesium	-211.6	78 - 115	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Iron	-4636	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Potassium	-86.92	81 - 116	30 - 125	percent	J/X	M	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Manganese	-91.76	84 - 114	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Chromium	53.27	85 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Barium	65.42	83 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Zinc	71.72	82 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Vanadium	74.16	82 - 114	30 - 125	percent	J/UJ	M	
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Manganese	117.4	84 - 114	30 - 125	percent	J/None	M	
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Vanadium	118.3	82 - 114	30 - 125	percent	J/None	M	
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Aluminum	1480	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Potassium	162.1	81 - 116	30 - 125	percent	J/None	M	
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Calcium	169.1	81 - 116	30 - 125	percent	J/None	M	
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Magnesium	279.7	78 - 115	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Iron	3333	81 - 118	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Aluminum	-444.4	74 - 119	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Calcium	-821.7	81 - 116	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Iron	-888.9	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Magnesium	2.174	78 - 115	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Manganese	32.61	84 - 114	30 - 125	percent	J/UJ	M	Spike amount Insignificant
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Potassium	52.17	81 - 116	30 - 125	percent	J/UJ	M	Spike amount Insignificant
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Barium	114.1	83 - 113	30 - 125	percent	J/None	M	
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Aluminum	1150	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Calcium	1468	81 - 116	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Manganese	193.2	84 - 114	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Potassium	232.4	81 - 116	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Magnesium	299.8	78 - 115	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Iron	3000	81 - 118	30 - 125	percent	J/None	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Chromium	1.10	24.5 N*	24.5 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Potassium	110	3910 N*	3910 J		mg/kg	M/D
PR79-SB-129-AS-01	N	Zinc	2.20	30.3 N*	30.3 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Vanadium	1.10	40.4 N*	40.4 J		mg/kg	M/D
PR79-SB-129-AS-01	N	Calcium	11.0	954 N*	954 J	+	mg/kg	M/D
PR79-SB-129-AS-01	N	Barium	0.560	128 N*	128 J	-	mg/kg	M/D
PR79-SB-129-BS-01	N	Barium	0.390	256 NA	256 J		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Nickel	21.31	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Calcium	21.72	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Zinc	29.88	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Chromium	33.80	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Vanadium	35.05	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Barium	36.09	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Aluminum	47.83	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Manganese	49.59	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Iron	52.75	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Magnesium	54.20	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Potassium	66.07	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Iron	20.32	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Manganese	20.38	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Potassium	20.64	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Magnesium	23.34	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Aluminum	23.94	< 20	< 20	rpd	J/UJ	D	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Calcium	97.79	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Barium	0.560	128 N*	128 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Calcium	11.0	954 N*	954 J	+	mg/kg	M/D
PR79-SB-129-AS-01	N	Chromium	1.10	24.5 N*	24.5 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Nickel	1.10	10.4 *	10.4 J		mg/kg	D
PR79-SB-129-AS-01	N	Vanadium	1.10	40.4 N*	40.4 J		mg/kg	M/D
PR79-SB-129-AS-01	N	Zinc	2.20	30.3 N*	30.3 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Aluminum	34.0	13400 N*	13400 J		mg/kg	D

Qualified Results associated with the MS RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Iron	11.0	17800 N*A	17800 J		mg/kg	D
PR79-SB-129-AS-01	N	Magnesium	11.0	4990 N*	4990 J		mg/kg	D
PR79-SB-129-AS-01	N	Manganese	0.560	234 N*	234 J		mg/kg	D
PR79-SB-129-AS-01	N	Potassium	110	3910 N*	3910 J		mg/kg	M/D
PR79-SB-129-BS-01	N	Calcium	7.90	4780 N*A	4780 J		mg/kg	D
PR79-SB-129-BS-01	N	Aluminum	24.0	12200 N*A	12200 J		mg/kg	D
PR79-SB-129-BS-01	N	Iron	7.90	17600 N*A	17600 J		mg/kg	D
PR79-SB-129-BS-01	N	Magnesium	7.90	5590 N*	5590 J		mg/kg	D
PR79-SB-129-BS-01	N	Manganese	0.390	342 N*A	342 J		mg/kg	D
PR79-SB-129-BS-01	N	Potassium	79.0	7470 N*A	7470 J		mg/kg	D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICB LNE14B 10:59 (CB)	Thallium	0.02600	< 0.0031	< 0.2	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-123-AS-01	N	Thallium	0.100	0.0980 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-125-AS-01	N	Thallium	0.120	0.110 J	0.120 UJ		mg/kg	B2/B3
PR79-SB-125-BS-01	N	Thallium	0.120	0.110 J	0.120 UJ		mg/kg	B2/B3
PR79-SB-133-AS-01	N	Thallium	0.0890	0.0750 J	0.0890 UJ		mg/kg	B2/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB LNE14B 17:30 (CB)	Thallium	-0.004000	< 0.0031	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-123-AS-01	N	Thallium	0.100	0.0980 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-125-AS-01	N	Thallium	0.120	0.110 J	0.120 UJ		mg/kg	B2/B3
PR79-SB-125-BS-01	N	Thallium	0.120	0.110 J	0.120 UJ		mg/kg	B2/B3
PR79-SB-133-AS-01	N	Thallium	0.0890	0.0750 J	0.0890 UJ		mg/kg	B2/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08IMS2 (LB)/ PBSNE08IMS2	Cadmium	0.008300	< 0.0076	< 0.1	mg/kg	U/None	L	
PBSNE08IMS2 (LB)/ PBSNE08IMS2	Beryllium	0.009100	< 0.0041	< 0.1	mg/kg	U/None	L	
PBSNE08IMS2 (LB)/ PBSNE08IMS2	Cobalt	0.01800	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Cadmium	0.0850	0.0400 J	0.0850 U		mg/kg	L
PR79-SB-122-BS-01	N	Cadmium	0.0990	0.0340 J	0.0990 U		mg/kg	L
PR79-SB-123-AS-01	N	Cadmium	0.100	0.0120 J	0.0210 U		mg/kg	L
PR79-SB-123-BS-01	N	Cadmium	0.0720	0.0150 J	0.0720 U		mg/kg	L
PR79-SB-125-AS-01	N	Cadmium	0.120	0.0310 J	0.120 U		mg/kg	L
PR79-SB-125-BS-01	N	Cadmium	0.120	0.0260 J	0.120 U		mg/kg	L
PR79-SB-127-BS-01	N	Cadmium	0.0910	0.0320 J	0.0910 U		mg/kg	L
PR79-SB-129-AS-01	N	Cadmium	0.110	0.0320 J	0.110 U		mg/kg	L
PR79-SB-129-BS-01	N	Cadmium	0.0790	0.0140 J	0.0160 U		mg/kg	L
PR79-SB-132-BS-01	N	Cadmium	0.0750	0.0260 J	0.0750 U		mg/kg	L
PR79-SB-133-AS-01	N	Cadmium	0.0890	0.0250 J	0.0890 U		mg/kg	L
PR79-SB-133-BS-01	N	Cadmium	0.0760	0.0260 J	0.0760 U		mg/kg	L
PR79-SB-138-AS-01	N	Cadmium	0.0880	0.0390 J	0.0880 U		mg/kg	L
PR79-SB-138-BS-01	N	Cadmium	0.0810	0.0190 J	0.0810 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-AS-01 (SD)/ SN3271-015P	Antimony	45.42	72 - 124	30 - 125	percent	J/UJ	M	
PR79-SB-129-AS-01 (MS)/ SN3271-015S	Antimony	39.60	72 - 124	30 - 125	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ SN3271-016P	Antimony	35.98	72 - 124	30 - 125	percent	J/UJ	M	
PR79-SB-129-BS-01 (MS)/ SN3271-016S	Antimony	35.11	72 - 124	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Antimony	0.110	0.0560 UNA	0.0560 UJ		mg/kg	M
PR79-SB-129-BS-01	N	Antimony	0.0790	0.0390 UN	0.0390 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Serial dilution

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
SN3271-15	Cobalt	11.00	< 10	< 10	percent	J/None	A	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Serial dilution for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-AS-01	N	Cobalt	0.110	6.64 E	6.64 J		mg/kg	A

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB HNE19A (CB)	Mercury	-0.03500			ug/l	J/UJ	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Mercury	0.0460	0.0300 J	0.0300 J		mg/kg	C/TR/B3
PR79-SB-122-BS-01	N	Mercury	0.0280	0.0140 U	0.0140 UJ		mg/kg	B3
PR79-SB-123-AS-01	N	Mercury	0.0350	0.0180 U	0.0180 UJ		mg/kg	B3
PR79-SB-123-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-125-AS-01	N	Mercury	0.0370	0.0672	0.0672 J	-	mg/kg	B3
PR79-SB-125-BS-01	N	Mercury	0.0410	0.0330 J	0.0330 J		mg/kg	C/TR/B3
PR79-SB-127-AS-01	N	Mercury	0.0350	0.0370	0.0370 J	-	mg/kg	B3
PR79-SB-127-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-129-AS-01	N	Mercury	0.0370	0.0210 J	0.0210 J		mg/kg	C/TR/B3
PR79-SB-129-BS-01	N	Mercury	0.0300	0.0150 UA	0.0150 UJ		mg/kg	B3
PR79-SB-132-AS-01	N	Mercury	0.0340	0.0150 J	0.0150 J		mg/kg	C/TR/B3
PR79-SB-132-BS-01	N	Mercury	0.0390	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-133-AS-01	N	Mercury	0.0360	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-133-BS-01	N	Mercury	0.0270	0.0140 U	0.0140 UJ		mg/kg	B3
PR79-SB-138-AS-01	N	Mercury	0.0320	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-138-BS-01	N	Mercury	0.0370	0.0190 U	0.0190 UJ		mg/kg	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSONE18HGS1 (BS)/ LCSONE18HGS1	Mercury	128.5	80 - 124	70 - 165	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Mercury	0.0460	0.0300 J	0.0300 J		mg/kg	C/TR/B3
PR79-SB-125-BS-01	N	Mercury	0.0410	0.0330 J	0.0330 J		mg/kg	C/TR/B3
PR79-SB-129-AS-01	N	Mercury	0.0370	0.0210 J	0.0210 J		mg/kg	C/TR/B3
PR79-SB-132-AS-01	N	Mercury	0.0340	0.0150 J	0.0150 J		mg/kg	C/TR/B3
PR79-SB-132-BS-01	N	Mercury	0.0390	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-133-AS-01	N	Mercury	0.0360	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-138-AS-01	N	Mercury	0.0320	0.0160 J	0.0160 J		mg/kg	C/TR/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-BS-01 (MS)/ WG276794-6	n-Butylbenzene	67.39	70 - 128	10 - 128	percent	J/UJ	M	
PR79-SB-129-BS-01 (MS)/ WG276794-6	p-Cymene (p-Isopropyltoluene)	71.74	73 - 127	10 - 127	percent	J/UJ	M	
PR79-SB-129-BS-01 (MS)/ WG276794-6	1,2,4-Trimethylbenzene	73.91	75 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-129-BS-01 (MS)/ WG276794-6	1,3-Dichlorobenzene	73.91	77 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-129-BS-01 (MS)/ WG276794-6	1,2-Dichlorobenzene	76.09	78 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	n-Butylbenzene	51.11	70 - 128	10 - 128	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	p-Cymene (p-Isopropyltoluene)	57.78	73 - 127	10 - 127	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	sec-Butylbenzene	60.00	73 - 126	10 - 126	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	n-Propylbenzene	64.44	73 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	1,3,5-Trimethylbenzene	66.67	73 - 124	10 - 124	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	tert-Butylbenzene	66.67	73 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	1,2,4-Trimethylbenzene	66.67	75 - 123	10 - 123	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	1,3-Dichlorobenzene	68.89	77 - 121	10 - 121	percent	J/UJ	M	
PR79-SB-129-BS-01 (SD)/ WG276794-7	1,2-Dichlorobenzene	73.33	78 - 121	10 - 121	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-BS-01	N	1,2,4-Trimethylbenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	1,2-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	1,3,5-Trimethylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	1,3-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	n-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	n-Propylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	p-Cymene (p-Isopropyltoluene)	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-BS-01	N	sec-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	tert-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-129-BS-01 (SD)/ WG276794-7	sec-Butylbenzene	22.95	< 20	< 20	rpd	J/None	D	
PR79-SB-129-BS-01 (SD)/ WG276794-7	p-Cymene (p-Isopropyltoluene)	23.73	< 20	< 20	rpd	J/None	D	
PR79-SB-129-BS-01 (SD)/ WG276794-7	n-Butylbenzene	29.63	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Dibenz(a,h)anthracene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V1/V2
PR79-SB-122-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V2
PR79-SB-122-AS-01	N	Pyrene	0.0260	0.0130 U	0.0130 UJ		mg/kg	V2
PR79-SB-122-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1/V2
PR79-SB-122-BS-01	N	Indeno(1,2,3-c,d)pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-122-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-123-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-123-AS-01	N	Pyrene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-123-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-123-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-125-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-125-AS-01	N	Pyrene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V2
PR79-SB-125-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-125-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-127-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-127-AS-01	N	Pyrene	0.0230	0.0120 U	0.0120 UJ		mg/kg	V2
PR79-SB-127-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-127-BS-01	N	Pyrene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-129-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-129-AS-01	N	Pyrene	0.0240	0.00320 J	0.00320 J		mg/kg	TR/V2
PR79-SB-129-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0240	0.0120 UMM	0.0120 UJ		mg/kg	M
PR79-SB-129-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00210 J	0.00210 J	-	mg/kg	M/TR
PR79-SB-129-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-129-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 UJ		mg/kg	V2
PR79-SB-132-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V1
PR79-SB-132-AS-01	N	Pyrene	0.0240	0.0120 U	0.0120 UJ		mg/kg	V2
PR79-SB-132-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-132-BS-01	N	Pyrene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-133-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-133-AS-01	N	Pyrene	0.0230	0.0110 U	0.0110 UJ		mg/kg	V2
PR79-SB-133-BS-01	N	Dibenz(a,h)anthracene	0.0180	0.00900 U	0.00900 UJ		mg/kg	V1
PR79-SB-133-BS-01	N	Pyrene	0.0180	0.00900 U	0.00900 UJ		mg/kg	V2
PR79-SB-138-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 UJ		mg/kg	V1
PR79-SB-138-AS-01	N	Pyrene	0.0220	0.00820 J	0.00820 J		mg/kg	TR/V2
PR79-SB-138-BS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 U	0.0100 UJ		mg/kg	V1
PR79-SB-138-BS-01	N	Pyrene	0.0200	0.0100 U	0.0100 UJ		mg/kg	V2

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Sodium	85.0	50.2 J	85.0 U		mg/kg	L
PR79-SB-123-AS-01	N	Sodium	100	66.9 J	100 U		mg/kg	L

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-125-AS-01	N	Sodium	120	54.1 J	58.0 U		mg/kg	L
PR79-SB-125-BS-01	N	Sodium	120	64.2 J	120 U		mg/kg	L
PR79-SB-127-BS-01	N	Sodium	91.0	77.0 J	91.0 U		mg/kg	L
PR79-SB-129-AS-01	N	Sodium	110	74.3 J	110 UJ		mg/kg	L/B3
PR79-SB-129-AS-01	N	Chromium	1.10	24.5 N*	24.5 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Nickel	1.10	10.4 *	10.4 J		mg/kg	D
PR79-SB-129-AS-01	N	Potassium	110	3910 N*	3910 J		mg/kg	M/D
PR79-SB-129-AS-01	N	Zinc	2.20	30.3 N*	30.3 J	-	mg/kg	M/D
PR79-SB-129-AS-01	N	Vanadium	1.10	40.4 N*	40.4 J		mg/kg	M/D
PR79-SB-129-AS-01	N	Aluminum	34.0	13400 N*	13400 J		mg/kg	D
PR79-SB-129-AS-01	N	Calcium	11.0	954 N*	954 J	+	mg/kg	M/D
PR79-SB-129-AS-01	N	Iron	11.0	17800 N*A	17800 J		mg/kg	D
PR79-SB-129-AS-01	N	Magnesium	11.0	4990 N*	4990 J		mg/kg	D
PR79-SB-129-AS-01	N	Manganese	0.560	234 N*	234 J		mg/kg	D
PR79-SB-129-AS-01	N	Barium	0.560	128 N*	128 J	-	mg/kg	M/D
PR79-SB-129-BS-01	N	Calcium	7.90	4780 N*A	4780 J		mg/kg	D
PR79-SB-129-BS-01	N	Aluminum	24.0	12200 N*A	12200 J		mg/kg	D
PR79-SB-129-BS-01	N	Iron	7.90	17600 N*A	17600 J		mg/kg	D
PR79-SB-129-BS-01	N	Magnesium	7.90	5590 N*	5590 J		mg/kg	D
PR79-SB-129-BS-01	N	Manganese	0.390	342 N*A	342 J		mg/kg	D
PR79-SB-129-BS-01	N	Potassium	79.0	7470 N*A	7470 J		mg/kg	D
PR79-SB-129-BS-01	N	Barium	0.390	256 NA	256 J		mg/kg	M
PR79-SB-132-AS-01	N	Sodium	98.0	50.2 J	98.0 U		mg/kg	L
PR79-SB-133-AS-01	N	Sodium	89.0	41.6 J	44.0 UJ		mg/kg	L/B3
PR79-SB-138-AS-01	N	Sodium	88.0	56.6 J	88.0 UJ		mg/kg	L/B3

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Cadmium	0.0850	0.0400 J	0.0850 U		mg/kg	L
PR79-SB-122-BS-01	N	Cadmium	0.0990	0.0340 J	0.0990 U		mg/kg	L
PR79-SB-123-AS-01	N	Thallium	0.100	0.0980 J	0.100 UJ		mg/kg	B2/B3
PR79-SB-123-AS-01	N	Cadmium	0.100	0.0120 J	0.0210 U		mg/kg	L
PR79-SB-123-BS-01	N	Cadmium	0.0720	0.0150 J	0.0720 U		mg/kg	L
PR79-SB-125-AS-01	N	Thallium	0.120	0.110 J	0.120 UJ		mg/kg	B2/B3
PR79-SB-125-AS-01	N	Cadmium	0.120	0.0310 J	0.120 U		mg/kg	L
PR79-SB-125-BS-01	N	Thallium	0.120	0.110 J	0.120 UJ		mg/kg	B2/B3
PR79-SB-125-BS-01	N	Cadmium	0.120	0.0260 J	0.120 U		mg/kg	L
PR79-SB-127-BS-01	N	Cadmium	0.0910	0.0320 J	0.0910 U		mg/kg	L
PR79-SB-129-AS-01	N	Cobalt	0.110	6.64 E	6.64 J		mg/kg	A
PR79-SB-129-AS-01	N	Cadmium	0.110	0.0320 J	0.110 U		mg/kg	L
PR79-SB-129-AS-01	N	Antimony	0.110	0.0560 UNA	0.0560 UJ		mg/kg	M
PR79-SB-129-BS-01	N	Cadmium	0.0790	0.0140 J	0.0160 U		mg/kg	L
PR79-SB-129-BS-01	N	Antimony	0.0790	0.0390 UN	0.0390 UJ		mg/kg	M

Table of All Qualified Results

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-132-BS-01	N	Cadmium	0.0750	0.0260 J	0.0750 U		mg/kg	L
PR79-SB-133-AS-01	N	Thallium	0.0890	0.0750 J	0.0890 UJ		mg/kg	B2/B3
PR79-SB-133-AS-01	N	Cadmium	0.0890	0.0250 J	0.0890 U		mg/kg	L
PR79-SB-133-BS-01	N	Cadmium	0.0760	0.0260 J	0.0760 U		mg/kg	L
PR79-SB-138-AS-01	N	Cadmium	0.0880	0.0390 J	0.0880 U		mg/kg	L
PR79-SB-138-BS-01	N	Cadmium	0.0810	0.0190 J	0.0810 U		mg/kg	L

Test Method: SW7471B Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-122-AS-01	N	Mercury	0.0460	0.0300 J	0.0300 J		mg/kg	C/TR/B3
PR79-SB-122-BS-01	N	Mercury	0.0280	0.0140 U	0.0140 UJ		mg/kg	B3
PR79-SB-123-AS-01	N	Mercury	0.0350	0.0180 U	0.0180 UJ		mg/kg	B3
PR79-SB-123-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-125-AS-01	N	Mercury	0.0370	0.0672	0.0672 J	-	mg/kg	B3
PR79-SB-125-BS-01	N	Mercury	0.0410	0.0330 J	0.0330 J		mg/kg	C/TR/B3
PR79-SB-127-AS-01	N	Mercury	0.0350	0.0370	0.0370 J	-	mg/kg	B3
PR79-SB-127-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 UJ		mg/kg	B3
PR79-SB-129-AS-01	N	Mercury	0.0370	0.0210 J	0.0210 J		mg/kg	C/TR/B3
PR79-SB-129-BS-01	N	Mercury	0.0300	0.0150 UA	0.0150 UJ		mg/kg	B3
PR79-SB-132-AS-01	N	Mercury	0.0340	0.0150 J	0.0150 J		mg/kg	C/TR/B3
PR79-SB-132-BS-01	N	Mercury	0.0390	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-133-AS-01	N	Mercury	0.0360	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-133-BS-01	N	Mercury	0.0270	0.0140 U	0.0140 UJ		mg/kg	B3
PR79-SB-138-AS-01	N	Mercury	0.0320	0.0160 J	0.0160 J		mg/kg	C/TR/B3
PR79-SB-138-BS-01	N	Mercury	0.0370	0.0190 U	0.0190 UJ		mg/kg	B3

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-129-BS-01	N	1,2,4-Trimethylbenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	1,2-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	1,3,5-Trimethylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	1,3-Dichlorobenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	n-Butylbenzene	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	n-Propylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	p-Cymene (p-Isopropyltoluene)	0.00460	0.00230 UMM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	sec-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M
PR79-SB-129-BS-01	N	tert-Butylbenzene	0.00460	0.00230 UM	0.00230 UJ	-	mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-122-AS-01	N	Dibenz(a,h)anthracene	0.0260	0.0130 U	0.0130 U	0.0130 UJ	V1/V2
PR79-SB-122-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0260	0.0130 U	0.0130 U	0.0130 UJ	V2
PR79-SB-122-AS-01	N	Pyrene	0.0260	0.0130 U	0.0130 U	0.0130 UJ	V2
PR79-SB-122-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V1/V2
PR79-SB-122-BS-01	N	Indeno(1,2,3-c,d)pyrene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V2
PR79-SB-122-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V2
PR79-SB-123-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-123-AS-01	N	Pyrene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V2
PR79-SB-123-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V1
PR79-SB-123-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V2
PR79-SB-125-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-125-AS-01	N	Pyrene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V2
PR79-SB-125-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V1
PR79-SB-125-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V2
PR79-SB-127-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-127-AS-01	N	Pyrene	0.0230	0.0120 U	0.0120 U	0.0120 UJ	V2
PR79-SB-127-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-127-BS-01	N	Pyrene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V2
PR79-SB-129-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-129-AS-01	N	Pyrene	0.0240	0.00320 J	0.00320 J	0.00320 J	TR/V2
PR79-SB-129-BS-01	N	Dibenz(a,h)anthracene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V1
PR79-SB-129-BS-01	N	Pyrene	0.0210	0.0100 U	0.0100 U	0.0100 UJ	V2
PR79-SB-132-AS-01	N	Dibenz(a,h)anthracene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V1
PR79-SB-132-AS-01	N	Pyrene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	V2
PR79-SB-132-BS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-132-BS-01	N	Pyrene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V2
PR79-SB-133-AS-01	N	Dibenz(a,h)anthracene	0.0230	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-133-AS-01	N	Pyrene	0.0230	0.0110 U	0.0110 U	0.0110 UJ	V2
PR79-SB-133-BS-01	N	Dibenz(a,h)anthracene	0.0180	0.00900 U	0.00900 U	0.00900 UJ	V1
PR79-SB-133-BS-01	N	Pyrene	0.0180	0.00900 U	0.00900 U	0.00900 UJ	V2
PR79-SB-138-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.0110 U	0.0110 U	0.0110 UJ	V1
PR79-SB-138-AS-01	N	Pyrene	0.0220	0.00820 J	0.00820 J	0.00820 J	TR/V2
PR79-SB-138-BS-01	N	Dibenz(a,h)anthracene	0.0200	0.0100 U	0.0100 U	0.0100 UJ	V1
PR79-SB-138-BS-01	N	Pyrene	0.0200	0.0100 U	0.0100 U	0.0100 UJ	V2

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-129-AS-01	N	Manganese	0.560	234 N*	234 J	234 J	D
PR79-SB-129-AS-01	N	Sodium	110	74.3 J	110 U	110 UJ	L/B3
PR79-SB-133-AS-01	N	Sodium	89.0	41.6 J	44.0 U	44.0 UJ	L/B3
PR79-SB-138-AS-01	N	Sodium	88.0	56.6 J	88.0 U	88.0 UJ	L/B3

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-123-AS-01	N	Thallium	0.100	0.0980 J	0.0980 J	0.100 UJ	B2/B3
PR79-SB-125-AS-01	N	Thallium	0.120	0.110 J	0.110 J	0.120 UJ	B2/B3
PR79-SB-125-BS-01	N	Thallium	0.120	0.110 J	0.110 J	0.120 UJ	B2/B3
PR79-SB-129-AS-01	N	Cobalt	0.110	6.64 E	6.64	6.64 J	A
PR79-SB-133-AS-01	N	Thallium	0.0890	0.0750 J	0.0750 J	0.0890 UJ	B2/B3

Modified Qualifiers for test method SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-122-AS-01	N	Mercury	0.0460	0.0300 J	0.0300 J	0.0300 J	C/TR/B3
PR79-SB-122-BS-01	N	Mercury	0.0280	0.0140 U	0.0140 U	0.0140 UJ	B3
PR79-SB-123-AS-01	N	Mercury	0.0350	0.0180 U	0.0180 U	0.0180 UJ	B3
PR79-SB-123-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 U	0.0160 UJ	B3
PR79-SB-125-AS-01	N	Mercury	0.0370	0.0672	0.0672	0.0672 J	B3
PR79-SB-125-BS-01	N	Mercury	0.0410	0.0330 J	0.0330 J	0.0330 J	C/TR/B3
PR79-SB-127-AS-01	N	Mercury	0.0350	0.0370	0.0370	0.0370 J	B3
PR79-SB-127-BS-01	N	Mercury	0.0310	0.0160 U	0.0160 U	0.0160 UJ	B3
PR79-SB-129-AS-01	N	Mercury	0.0370	0.0210 J	0.0210 J	0.0210 J	C/TR/B3
PR79-SB-129-BS-01	N	Mercury	0.0300	0.0150 UA	0.0150 U	0.0150 UJ	B3
PR79-SB-132-AS-01	N	Mercury	0.0340	0.0150 J	0.0150 J	0.0150 J	C/TR/B3
PR79-SB-132-BS-01	N	Mercury	0.0390	0.0160 J	0.0160 J	0.0160 J	C/TR/B3
PR79-SB-133-AS-01	N	Mercury	0.0360	0.0160 J	0.0160 J	0.0160 J	C/TR/B3
PR79-SB-133-BS-01	N	Mercury	0.0270	0.0140 U	0.0140 U	0.0140 UJ	B3
PR79-SB-138-AS-01	N	Mercury	0.0320	0.0160 J	0.0160 J	0.0160 J	C/TR/B3
PR79-SB-138-BS-01	N	Mercury	0.0370	0.0190 U	0.0190 U	0.0190 UJ	B3

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-123-BS-01	N	Chloromethane	0.00800	0.00400 U	0.00400 U	0.00400 UJ	V2
PR79-SB-138-BS-01	N	Chloromethane	0.00960	0.00480 U	0.00480 U	0.00480 UJ	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
A	Serial dilution
B2	CCB
B3	CCB - Neg
C	LCS Recovery
D	MS RPD
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		5/11/20 Dibenzo(a,h)anthracene 79.39%R. All samples qualified J/UJ, low bias
Were CCVs run at the required frequency and within acceptance criteria?		•		CCV 5/8/20 Indeno(1,2,3-cd)pyrene below criteria; associated with MB and LCS, no samples. CCV WG277405-9 above criteria for pyrene, below criteria for indeno(123cd)pyrene and dibenzo(ah)anthracene. Assoc samples SN3271-1, -2 qualified J/UJ. CCV WG277405-10 and WG277405-11 not assoc with samples; no quals. CCV WG277489-2 above criteria for pyrene; assoc samples SN3271-3 thru 16 qualified (J/UJ).
Were Internal Standard retention times and area criteria within method requirements?	•			One IS out for CCV; no quals
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?	•			One surr above criteria in MS sample; no quals.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no EB in this data set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Indeno(1,2,3-cd)pyrene below %R limits in PR79-SB-129-AS-01 MS and MSD, RPD ok
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No FDs in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV outside criteria, samples analyzed. ICV should have been reanalyzed before samples per QSM.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			CCVs bracketing samples were within criteria; no quals
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		Na results in samples SN3271-11,13,15 qualified UJ due to neg drift.
Did the ICSA have any non-target interferents above the MDL?	•			INE12A ICSA Cr, Ni, Zn >MDL; no quals based on PJ since sample conc of interferents <ICSA.
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Results for Na in several samples negated (U)
Were target analytes in the field blank less than MDL?			•	No EB in this data set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outliers report. PR79-SB-129-BS-01: Ba %R high, PDS <125%R. Qual (J) no bias (removed bias). Other %R and RPD out due to sample >4X, no quals.
Was the MS/MSD RPD within project acceptance limits?		•		PR79-SB-129-AS-01: Ba,Ca,Cr,Fe,Mg,Mn,Ni,K,V,Zn PR79-SB-129-BS-01: ok
Were the post spike recoveries within project acceptance limits?		•		PR79-SB-129-AS-01: okPR79-SB-129-BS-01: Ba <75%Rno actions for other PDS %R
Were the serial dilution RPD values within project acceptance limits?	•			PR79-SB-129-AS-01: okPR79-SB-129-BS-01: okfor results >50X LOQ
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3271

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			CCVs bracketing samples acceptable
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		LNE14B: Tl in blank <LOQ, and neg drift. All samples except -7. Results <QL were negated and qual (UJ).
Did the ICSA have any non-target interferents above the MDL?		•		
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Results for Cd negated (U) in several samples
Were target analytes in the field blank less than MDL?			•	No EB in this data set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-SB-129-AS-01, PR79-SB-129-BS-01
Were MS/MSD recoveries within project acceptance limits?		•		PR79-SB-129-AS-01: Sb low MS%R, PDS ok (J/UJ) PR79-SB-129-BS-01: Sb low MS%R, PDS ok (J/UJ)
Was the MS/MSD RPD within project acceptance limits?	•			PR79-SB-129-AS-01: ok PR79-SB-129-BS-01: ok
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were the post spike recoveries within project acceptance limits?		•		some PDS %Rs outside 80-120. No quals required for Cobalt PDS in sample SN3271-16, "A" flag manually removed. No quals for Be PDS in sample SN3271-15 - "A" flag removed manually.
Were the serial dilution RPD values within project acceptance limits?		•		PR79-SB-129-AS-01: Co >10%D (J) PR79-SB-129-BS-01: ok
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			

Data Validation Report for SN3271

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		All Hg results qualified J/UJ low bias due to neg drift in ICB/CCB. MBs ND.
Were target analytes in the field blank less than MDL?			•	No EB in this data set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		NE18HGS1 LCS above criteria; associated results quals J high bias (all samples except SN3271-5, 7).
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-SB-129-AS-01, PR79-SB-129-BS-01
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No FDs in this data set
Were QAPP specified laboratory PQLs achieved?	•			lab LOQ meets QAPP lab limits
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		WG276912-4 Chloromethane -22.8%D; qual J/UJ samples SN3271-4RA, -14
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			TB-01-SOBG-01-0427 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-SB-129-BS-01
Were MS/MSD recoveries within project acceptance limits?		•		9 cmpds %R below criteria, qualify J/UJ low bias in parent. (added bias -)
Was the MS/MSD RPD within project acceptance limits?		•		3 RPDs outside criteria; no quals results in parent ND
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3272

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3272
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-024-PW-01	SN3272-003		Field Sample/N	X			X		X		X					
PR79-WT-024-PW-01	SN3272-3		Field Sample/N			X										
PR79-WT-024-PW-01	SN3272-3RA		Field Sample/N											X		
PR79-WT-024-PW-01-F	SN3272-004		Field Sample/N					X		X		X				
PR79-WT-025-PW-01	SN3272-007		Field Sample/N	X			X		X		X					
PR79-WT-025-PW-01	SN3272-7		Field Sample/N			X										
PR79-WT-025-PW-01	SN3272-7RA		Field Sample/N											X		
PR79-WT-025-PW-01-F	SN3272-008		Field Sample/N					X		X		X				
PR79-WT-024-SD-01	SN3272-009	Solid	Field Sample/N				X		X				X			
PR79-WT-024-SD-01	SN3272-010	Solid	Field Sample/N				X									
PR79-WT-024-SD-01	SN3272-10	Solid	Field Sample/N		X											
PR79-WT-024-SD-01	SN3272-9	Solid	Field Sample/N			X								X	X	X
PR79-WT-025-SD-01	SN3272-011	Solid	Field Sample/N				X		X				X			
PR79-WT-025-SD-01	SN3272-012	Solid	Field Sample/N				X									
PR79-WT-025-SD-01	SN3272-11	Solid	Field Sample/N			X									X	X
PR79-WT-025-SD-01	SN3272-11RA	Solid	Field Sample/N											X		
PR79-WT-025-SD-01	SN3272-12	Solid	Field Sample/N		X											
TB-02-SDBG-01	SN3272-15	Solid	Trip Blank/TB											X		
PR79-WT-024-SW-01	SN3272-001	Water	Field Sample/N	X			X		X		X					
PR79-WT-024-SW-01	SN3272-1	Water	Field Sample/N			X										

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-024-PW-01	SN3272-003		Field Sample/N	
PR79-WT-024-PW-01	SN3272-3		Field Sample/N	X
PR79-WT-024-PW-01	SN3272-3RA		Field Sample/N	
PR79-WT-024-PW-01-F	SN3272-004		Field Sample/N	
PR79-WT-025-PW-01	SN3272-007		Field Sample/N	
PR79-WT-025-PW-01	SN3272-7		Field Sample/N	X
PR79-WT-025-PW-01	SN3272-7RA		Field Sample/N	
PR79-WT-025-PW-01-F	SN3272-008		Field Sample/N	
PR79-WT-024-SD-01	SN3272-009	Solid	Field Sample/N	
PR79-WT-024-SD-01	SN3272-010	Solid	Field Sample/N	
PR79-WT-024-SD-01	SN3272-10	Solid	Field Sample/N	
PR79-WT-024-SD-01	SN3272-9	Solid	Field Sample/N	
PR79-WT-025-SD-01	SN3272-011	Solid	Field Sample/N	
PR79-WT-025-SD-01	SN3272-012	Solid	Field Sample/N	
PR79-WT-025-SD-01	SN3272-11	Solid	Field Sample/N	
PR79-WT-025-SD-01	SN3272-11RA	Solid	Field Sample/N	
PR79-WT-025-SD-01	SN3272-12	Solid	Field Sample/N	
TB-02-SDBG-01	SN3272-15	Solid	Trip Blank/TB	
PR79-WT-024-SW-01	SN3272-001	Water	Field Sample/N	
PR79-WT-024-SW-01	SN3272-1	Water	Field Sample/N	X

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Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-024-SW-01	SN3272-1RA	Water	Field Sample/N											X		
PR79-WT-024-SW-01-F	SN3272-002	Water	Field Sample/N					X		X		X				
PR79-WT-025-SW-01	SN3272-005	Water	Field Sample/N	X			X		X		X					
PR79-WT-025-SW-01	SN3272-5	Water	Field Sample/N			X										
PR79-WT-025-SW-01	SN3272-5RA	Water	Field Sample/N											X		
PR79-WT-025-SW-01-F	SN3272-006	Water	Field Sample/N					X		X		X				
TB-02-PWBG-01	SN3272-14	Water	Trip Blank/TB													
TB-02-PWBG-01	SN3272-14RA	Water	Trip Blank/TB											X		
TB-02-SWBG-01	SN3272-13	Water	Trip Blank/TB													
TB-02-SWBG-01	SN3272-13RA	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-024-SW-01	SN3272-1RA	Water	Field Sample/N	
PR79-WT-024-SW-01-F	SN3272-002	Water	Field Sample/N	
PR79-WT-025-SW-01	SN3272-005	Water	Field Sample/N	
PR79-WT-025-SW-01	SN3272-5	Water	Field Sample/N	X
PR79-WT-025-SW-01	SN3272-5RA	Water	Field Sample/N	
PR79-WT-025-SW-01-F	SN3272-006	Water	Field Sample/N	
TB-02-PWBG-01	SN3272-14	Water	Trip Blank/TB	X
TB-02-PWBG-01	SN3272-14RA	Water	Trip Blank/TB	
TB-02-SWBG-01	SN3272-13	Water	Trip Blank/TB	X
TB-02-SWBG-01	SN3272-13RA	Water	Trip Blank/TB	

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3272. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 188 results (25.90%) out of the 726 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.
BNASIM	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.
SW6010C	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.
SW6020A	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.
SW8260C	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	Sample PR79-WT-025-SD-01 %solid - 24.4%. J/UJ results.

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method AVS, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	Sulfide	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Sulfide	0.410	0.310 U	0.310 UJ		umoles/g	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277405-8 ICV (IV)	Dibenz (a,h)anthracene	79.39	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Dibenz(a,h)anthracene	0.200	0.0980 U	0.0980 UJ		ug/l	V1
PR79-WT-024-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-WT-025-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ		ug/l	V1
PR79-WT-025-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	1,4-Dioxane (p-Dioxane)	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	1,4-Dioxane (p-Dioxane)	0.400	0.00860 J	0.00860 J		mg/kg	TR/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INF03A 22:02 (CB)	Copper	0.6280	< 0.55	< 25	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Copper	0.0130	0.00239 J	0.00540 U		umoles/g	B2
PR79-WT-025-SD-01	N	Copper	10.0	6.61 J	10.0 UJ		mg/kg	B2/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INE14A 20:47 (CB)	Chromium	0.2650	< 0.2	< 10	ug/l	None/None	B2	
CCB-INE14A 20:47 (CB)	Iron	12.87	< 3.6	< 100	ug/l	None/None	B2	
CCB-INE14A 20:47 (CB)	Magnesium	5.197	< 2.9	< 100	ug/l	None/None	B2	
CCB-INE15A 00:45 (CB)	Chromium	0.2870	< 0.2	< 10	ug/l	None/None	B2	
CCB-INE15A 00:45 (CB)	Iron	12.91	< 3.6	< 100	ug/l	None/None	B2	
CCB-INE15A 23:53 (CB)	Sodium	26.41	< 12	< 1000	ug/l	None/None	B2	
CCB-INF03A 21:06 (CB)	Magnesium	4.765	< 2.9	< 100	ug/l	None/None	B2	
CCB-INF04A 14:54 (CB)	Calcium	11.61	< 11	< 100	ug/l	None/None	B2	
CCB-INF04A 15:53 (CB)	Aluminum	15.23	< 10	< 300	ug/l	None/None	B2	
CCB-INF04A 15:53 (CB)	Magnesium	4.073	< 2.9	< 100	ug/l	None/None	B2	
CCB-INF04A 15:53 (CB)	Iron	7.246	< 3.6	< 100	ug/l	None/None	B2	
ICB-INE14A 12:24 (CB)	Copper	0.7430	< 0.55	< 25	ug/l	None/None	B2	
ICB-INF03A 11:18 (CB)	Iron	4.426	< 3.6	< 100	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Iron	100	56.2 J	80.0 U		ug/l	B2
PR79-WT-024-SD-01	N	Copper	0.0130	0.00239 J	0.00540 U		umoles/g	B2
PR79-WT-024-SW-01	N	Aluminum	300	198 J	300 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	B2
PR79-WT-025-SD-01	N	Copper	10.0	6.61 J	10.0 UJ		mg/kg	B2/Z8
PR79-WT-025-SW-01	N	Aluminum	300	174 J	300 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INE14A 21:38 (CB)	Chromium	-0.3170	< 0.2	< 10	ug/l	None/None	B3	
CCB-INE14A 21:38 (CB)	Aluminum	-10.79	< 10	< 300	ug/l	None/None	B3	
CCB-INE14A 21:38 (CB)	Sodium	-22.92	< 12	< 1000	ug/l	None/None	B3	
CCB-INE15A 17:44 (CB)	Vanadium	-0.5350	< 0.53	< 10	ug/l	None/None	B3	
CCB-INE15A 23:53 (CB)	Zinc	-1.301	< 0.45	< 20	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INE05A 00:02 (CB)	Potassium	113.2	< 73	< 1000	ug/l	None/None	B2	
CCB-INE05A 00:02 (CB)	Aluminum	16.43	< 10	< 300	ug/l	None/None	B2	
CCB-INE05A 00:02 (CB)	Iron	9.451	< 3.6	< 100	ug/l	None/None	B2	
CCB-INE05A 00:54 (CB)	Sodium	22.37	< 12	< 1000	ug/l	None/None	B2	
ICB INE05A 17:15 (CB)	Barium	0.4850	< 0.41	< 5	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Iron	100	56.2 J	80.0 U		ug/l	B2
PR79-WT-024-SW-01	N	Aluminum	300	198 J	300 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	B2
PR79-WT-025-SW-01	N	Aluminum	300	174 J	300 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INE05A 00:02 (CB)	Chromium	-0.2520	< 0.2	< 10		None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-PW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-SW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS1 (LB)/ PBSNE08ICS1	Zinc	0.001780	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Zinc	0.0100	0.00842 J	0.0100 U		umoles/ g	L
PR79-WT-025-SD-01	N	Zinc	0.120	0.0343 J	0.0580 UJ		umoles/ g	L/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Chromium	0.06500	< 0.026	< 1	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Magnesium	1.400	< 0.68	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Iron	1.800	< 1.4	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Potassium	14.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Sodium	3.900	< 1.5	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Nickel	0.05000	< 0.044	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Chromium	0.07400	< 0.026	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Magnesium	1.500	< 0.68	< 10	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Potassium	20.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Sodium	6.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Sodium	130	67.4 J	130 U		mg/kg	L
PR79-WT-025-SD-01	N	Sodium	410	213 J	410 UJ		mg/kg	L/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	Cadmium	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Cadmium	0.0170	0.00234 J	0.00234 J		umoles/g	TR/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	Aluminum	24.40	30 - 100	10 - 100		None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Aluminum	120	18900	18900 J		mg/kg	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INE05A 00:02 (CB)	Potassium	113.2	< 73	< 1000	ug/l	None/None	B2	
ICB INE05A 17:15 (CB)	Barium	0.4850	< 0.41	< 5	ug/l	None/None	B2	
CCB-INE05A 00:02 (CB)	Aluminum	16.43	< 10	< 300	ug/l	None/None	B2	
CCB-INE05A 00:02 (CB)	Iron	9.451	10 - 3.6	< 100	ug/l	None/None	B2	
CCB-INE05A 00:54 (CB)	Sodium	22.37	< 12	< 1000	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Iron	100	56.2 J	80.0 U		ug/l	B2
PR79-WT-024-SW-01	N	Aluminum	300	198 J	300 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	B2
PR79-WT-025-SW-01	N	Aluminum	300	174 J	300 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-INE05A 00:02 (CB)	Chromium	-0.2520	< 0.2	< 10	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Chromium	10.0	2.50 J	2.50 J	-	ug/l	TR/B3
PR79-WT-024-SW-01	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-PW-01	N	Chromium	10.0	0.820 J	0.820 J	-	ug/l	TR/B3
PR79-WT-025-SW-01	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05ICW1 (LB)/ PBWNE05ICW1	Magnesium	11.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE05ICW1 (LB)/ PBWNE05ICW1	Potassium	110.0	< 41	< 1000	ug/l	U/None	L	
PBWNE05ICW1 (LB)/ PBWNE05ICW1	Sodium	31.00	< 24	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SW-01	N	Potassium	1000	1000 J	1000 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-LNE15A 19:59 (CB)	Thallium	0.01800	< 0.0031	< 0.2	ug/l	None/None	B2	
CCB-LNE15A 19:59 (CB)	Beryllium	0.04600	< 0.0077	< 0.2	ug/l	None/None	B2	
CCB-LNE15A 20:31 (CB)	Cobalt	0.03600	< 0.0046	< 0.2	ug/l	None/None	B2	
ICB-LNE18A 14:25 (CB)	Thallium	0.03400	< 0.0031	< 0.2	ug/l	None/None	B2	
ICB-LNE18A 14:25 (CB)	Beryllium	0.04700	< 0.0077	< 0.2	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Beryllium	1.00	0.0560 J	0.200 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Cobalt	1.00	0.0710 J	0.300 U		ug/l	B2
PR79-WT-024-SD-01	N	Thallium	0.130	0.0450 J	0.0530 U		mg/kg	B2
PR79-WT-024-SW-01-F	N	Beryllium	1.00	0.0460 J	0.200 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Beryllium	1.00	0.0370 J	0.200 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICB-LNE05A 18:37 (CB)	Cobalt	0.006000	< 0.0046	< 0.2	ug/l	None/None	B2	
ICB-LNE05A 18:37 (CB)	Lead	0.01000	< 0.0049	< 0.2	ug/l	None/None	B2	
ICB-LNE05A 18:37 (CB)	Thallium	0.02700	< 0.0031	< 0.2	ug/l	None/None	B2	
ICB-LNE05A 18:37 (CB)	Beryllium	0.02900	< 0.0077	< 0.2	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Beryllium	1.00	0.0560 J	0.200 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Cobalt	1.00	0.0710 J	0.300 U		ug/l	B2
PR79-WT-024-SD-01	N	Thallium	0.130	0.0450 J	0.0530 U		mg/kg	B2
PR79-WT-024-SW-01-F	N	Beryllium	1.00	0.0460 J	0.200 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Beryllium	1.00	0.0370 J	0.200 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Lead	1.00	0.110 J	0.500 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-LNE05A 21:47 (CB)	Lead	-0.02000	< 0.0049	< 0.2	ug/l	None/None	B3	
CCB-LNE27A 12:08 (CB)	Nickel	-0.02800	< 0.014	< 0.4	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Lead	1.00	0.500 U	0.500 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Lead	1.00	0.500 U	0.500 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Nickel	2.00	1.20 U	1.20 UJ	-	ug/l	B3
PR79-WT-025-SW-01-F	N	Lead	1.00	0.500 U	0.500 UJ	-	ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	Antimony	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Antimony	0.410	0.160 J	0.160 J		mg/kg	TR/Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB-LNE27A 12:08 (CB)	Nickel	-0.02800	< 0.014	< 0.4	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Nickel	2.00	1.54 J	2.00 UJ	-	ug/l	L/B3
PR79-WT-024-SW-01	N	Nickel	2.00	0.300 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-025-PW-01	N	Nickel	2.00	0.460 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-025-SW-01	N	Nickel	2.00	0.450 J	1.20 UJ	-	ug/l	L/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Cadmium	0.03800	< 0.03	< 1	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Beryllium	0.1200	< 0.034	< 1	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Selenium	0.2000	< 0.19	< 5	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Lead	0.2800	< 0.074	< 1	ug/l	U/None	L	
PBWNE05IMW1 (LB)/ PBWNE05IMW1	Nickel	0.5700	< 0.15	< 2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Beryllium	1.00	0.0990 J	0.200 U		ug/l	L
PR79-WT-024-PW-01	N	Cadmium	1.00	0.0510 J	0.200 U		ug/l	L
PR79-WT-024-PW-01	N	Lead	1.00	0.926 J	1.00 U		ug/l	L
PR79-WT-024-PW-01	N	Nickel	2.00	1.54 J	2.00 UJ	-	ug/l	L/B3
PR79-WT-024-SW-01	N	Beryllium	1.00	0.0800 J	0.200 U		ug/l	L
PR79-WT-024-SW-01	N	Lead	1.00	0.460 J	0.500 U		ug/l	L
PR79-WT-024-SW-01	N	Nickel	2.00	0.300 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-025-PW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-025-PW-01	N	Cadmium	1.00	0.0320 J	0.200 U		ug/l	L
PR79-WT-025-PW-01	N	Nickel	2.00	0.460 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-025-PW-01	N	Selenium	5.00	0.200 J	3.00 U		ug/l	L
PR79-WT-025-SW-01	N	Beryllium	1.00	0.0360 J	0.200 U		ug/l	L
PR79-WT-025-SW-01	N	Lead	1.00	0.150 J	0.500 U		ug/l	L
PR79-WT-025-SW-01	N	Nickel	2.00	0.450 J	1.20 UJ	-	ug/l	L/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB - HNE06B 14:51 (CB)	Mercury	-0.01800	< 0.013	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-PW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-SW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB - HNE06B 14:51 (CB)	Mercury	-0.01800	< 0.013	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-024-SW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-PW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-SW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, Calibration Blank - Negative

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB - HNE19A 13:20 (CB)	Mercury	-0.02900	< 0.016	< 0.2	ug/l	None/None	B3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank - Negative for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Mercury	0.0510	0.0130 J	0.0130 J	-	mg/kg	TR/B3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7471B, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	Mercury	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Mercury	0.100	0.130	0.130 J		mg/kg	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	1,1,1-Trichloroethane	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	1,1,1-Trichloroethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-024-PW-01 (N)/ SN3272-3RA	1,2-Dichloroethane-d4	138.0	81 - 118	10 - 118	percent	J/None	I	
PR79-WT-024-SW-01 (N)/ SN3272-1RA	1,2-Dichloroethane-d4	141.0	81 - 118	10 - 118	percent	J/None	I	
PR79-WT-025-PW-01 (N)/ SN3272-7RA	1,2-Dichloroethane-d4	140.0	81 - 118	10 - 118	percent	J/None	I	
PR79-WT-025-SW-01 (N)/ SN3272-5RA	1,2-Dichloroethane-d4	145.0	81 - 118	10 - 118	percent	J/None	I	
TB-02-PWBG-01 (TB)/ SN3272-14RA	1,2-Dichloroethane-d4	126.0	81 - 118	10 - 118	percent	J/None	I	
TB-02-SWBG-01 (TB)/ SN3272-13RA	1,2-Dichloroethane-d4	123.0	81 - 118	10 - 118	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-024-SD-01 (N)/ SN3272-9	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	65.60	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,1-Dichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,1-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	2-Butanone (MEK)	0.0500	0.100	0.100 J		mg/kg	I/S
PR79-WT-024-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0500	0.0250 U	0.0250 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Acetone	0.0500	0.310	0.310 J		mg/kg	I/S
PR79-WT-024-SD-01	N	Benzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Bromodichloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Bromomethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Carbon disulfide	0.0100	0.00200 J	0.00200 J		mg/kg	I/TR/S
PR79-WT-024-SD-01	N	Chloroethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Chloroform	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Chloromethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S/V2
PR79-WT-024-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Dibromochloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Ethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	m,p-Xylene	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Methylene chloride	0.0500	0.0250 U	0.0250 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	n-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	n-Propylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	o-Xylene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	sec-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	tert-Butyl alcohol	0.0500	0.0250 U	0.0250 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	tert-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Toluene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Trichloroethene (TCE)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Vinyl chloride	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-SDBG-01 (TB)/ SN3272-15	Toluene	0.001900	< 0.0014	< 0.005	mg/kg	U/None	T	
TB-02-SDBG-01 (TB)/ SN3272-15	Acetone	0.006100	< 0.0051	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-024-SD-01 (N)/ SN3272-9		48.10	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-025-SD-01 (N)/ SN3272-11		47.10	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	pH	0.100	5.80	5.80 J	-	ph units	H2
PR79-WT-025-SD-01	N	pH	0.100	5.90	5.90 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, Low percent solids

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-025-SD-01	Total Organic Carbon	24.40	30 - 100	10 - 100	percent	None/None	Z8	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Low percent solids for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Total Organic Carbon	5300	270000	270000 J		ug/g	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-SWBG-01 (TB)/ SN3272-13	Benzene	0.01200	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: AVS Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Sulfide	0.410	0.310 U	0.310 UJ		umoles/g	Z8

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Dibenz(a,h)anthracene	0.200	0.0980 U	0.0980 UJ		ug/l	V1
PR79-WT-024-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 UJ		ug/l	V1
PR79-WT-025-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ		ug/l	V1
PR79-WT-025-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ		ug/l	V1

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	1,4-Dioxane (p-Dioxane)	0.400	0.00860 J	0.00860 J		mg/kg	TR/Z8

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Copper	0.0130	0.00239 J	0.00540 U		umoles/g	B2
PR79-WT-024-SD-01	N	Zinc	0.0100	0.00842 J	0.0100 U		umoles/g	L
PR79-WT-025-SD-01	N	Cadmium	0.0170	0.00234 J	0.00234 J		umoles/g	TR/Z8
PR79-WT-025-SD-01	N	Zinc	0.120	0.0343 J	0.0580 UJ		umoles/g	L/Z8

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Copper	3.30	0.940 J	1.30 U		mg/kg	B2
PR79-WT-024-SD-01	N	Sodium	130	67.4 J	130 U		mg/kg	L
PR79-WT-025-SD-01	N	Aluminum	120	18900	18900 J		mg/kg	Z8
PR79-WT-025-SD-01	N	Copper	10.0	6.61 J	10.0 UJ		mg/kg	B2/Z8
PR79-WT-025-SD-01	N	Sodium	410	213 J	410 UJ		mg/kg	L/Z8

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-024-PW-01-F	N	Iron	100	56.2 J	80.0 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-PW-01-F	N	Aluminum	300	96.0 J	100 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Chromium	10.0	2.50 J	2.50 J	-	ug/l	TR/B3
PR79-WT-024-SW-01	N	Aluminum	300	198 J	300 U		ug/l	B2
PR79-WT-024-SW-01	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-PW-01	N	Chromium	10.0	0.820 J	0.820 J	-	ug/l	TR/B3
PR79-WT-025-SW-01	N	Aluminum	300	174 J	300 U		ug/l	B2
PR79-WT-025-SW-01	N	Chromium	10.0	4.00 U	4.00 UJ	-	ug/l	B3
PR79-WT-025-SW-01	N	Potassium	1000	1000 J	1000 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Beryllium	1.00	0.0560 J	0.200 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Cobalt	1.00	0.0710 J	0.300 U		ug/l	B2
PR79-WT-024-PW-01-F	N	Lead	1.00	0.500 U	0.500 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Beryllium	1.00	0.0460 J	0.200 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Cobalt	1.00	0.150 J	0.300 U		ug/l	B2
PR79-WT-024-SW-01-F	N	Lead	1.00	0.500 U	0.500 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Nickel	2.00	1.20 U	1.20 UJ	-	ug/l	B3
PR79-WT-025-PW-01-F	N	Beryllium	1.00	0.0370 J	0.200 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	B2
PR79-WT-025-PW-01-F	N	Lead	1.00	0.110 J	0.500 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Cobalt	1.00	0.210 J	0.300 U		ug/l	B2
PR79-WT-025-SW-01-F	N	Lead	1.00	0.500 U	0.500 UJ	-	ug/l	B3

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Thallium	0.130	0.0450 J	0.0530 U		mg/kg	B2
PR79-WT-025-SD-01	N	Antimony	0.410	0.160 J	0.160 J		mg/kg	TR/Z8

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Nickel	2.00	1.54 J	2.00 UJ	-	ug/l	L/B3
PR79-WT-024-PW-01	N	Beryllium	1.00	0.0990 J	0.200 U		ug/l	L
PR79-WT-024-PW-01	N	Cadmium	1.00	0.0510 J	0.200 U		ug/l	L
PR79-WT-024-PW-01	N	Lead	1.00	0.926 J	1.00 U		ug/l	L
PR79-WT-024-SW-01	N	Nickel	2.00	0.300 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-024-SW-01	N	Beryllium	1.00	0.0800 J	0.200 U		ug/l	L
PR79-WT-024-SW-01	N	Lead	1.00	0.460 J	0.500 U		ug/l	L
PR79-WT-025-PW-01	N	Nickel	2.00	0.460 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-025-PW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-025-PW-01	N	Cadmium	1.00	0.0320 J	0.200 U		ug/l	L
PR79-WT-025-PW-01	N	Selenium	5.00	0.200 J	3.00 U		ug/l	L
PR79-WT-025-SW-01	N	Nickel	2.00	0.450 J	1.20 UJ	-	ug/l	L/B3
PR79-WT-025-SW-01	N	Beryllium	1.00	0.0360 J	0.200 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SW-01	N	Lead	1.00	0.150 J	0.500 U		ug/l	L

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-024-SW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-PW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-SW-01-F	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3

Test Method: SW7470A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-PW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-024-SW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-PW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3
PR79-WT-025-SW-01	N	Mercury	0.200	0.100 U	0.100 UJ	-	ug/l	B3

Test Method: SW7471B Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Mercury	0.0510	0.0130 J	0.0130 J	-	mg/kg	TR/B3
PR79-WT-025-SD-01	N	Mercury	0.100	0.130	0.130 J		mg/kg	Z8

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,1-Dichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,1-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	2-Butanone (MEK)	0.0500	0.100	0.100 J		mg/kg	I/S
PR79-WT-024-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0500	0.0250 U	0.0250 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Acetone	0.0500	0.310	0.310 J		mg/kg	I/S
PR79-WT-024-SD-01	N	Benzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Bromodichloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Bromomethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Carbon disulfide	0.0100	0.00200 J	0.00200 J		mg/kg	I/TR/S
PR79-WT-024-SD-01	N	Chloroethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Chloroform	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Chloromethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S/V2
PR79-WT-024-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	Dibromochloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Ethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	m,p-Xylene	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Methylene chloride	0.0500	0.0250 U	0.0250 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	n-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	n-Propylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	o-Xylene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	sec-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	tert-Butyl alcohol	0.0500	0.0250 U	0.0250 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	tert-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Toluene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Trichloroethene (TCE)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I/S
PR79-WT-024-SD-01	N	Vinyl chloride	0.0200	0.0100 U	0.0100 UJ		mg/kg	I/S
PR79-WT-025-SD-01	N	1,1,1-Trichloroethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	Z8

Test Method: SW9045D	Extraction Method: METHOD							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-024-SD-01	N	pH	0.100	5.80	5.80 J	-	ph units	H2
PR79-WT-025-SD-01	N	pH	0.100	5.90	5.90 J	-	ph units	H2

Test Method: SW9060A	Extraction Method: NONE							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-025-SD-01	N	Total Organic Carbon	5300	270000	270000 J		ug/g	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-025-SD-01	N	Sulfide	0.410	0.310 U	0.310 U	0.310 UJ	Z8

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01	N	Dibenz(a,h)anthracene	0.200	0.0980 U	0.0980 U	0.0980 UJ	V1
PR79-WT-024-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0940 U	0.0940 U	0.0940 UJ	V1
PR79-WT-025-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 U	0.0950 UJ	V1
PR79-WT-025-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 U	0.0950 UJ	V1

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	Dibenz(a,h)anthracene	0.0340	0.0170 U	0.0170 U	0.0170 UJ	V1
PR79-WT-025-SD-01	N	1,4-Dioxane (p-Dioxane)	0.400	0.00860 J	0.00860 J	0.00860 J	TR/Z8
PR79-WT-025-SD-01	N	2-Methylnaphthalene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	Z8
PR79-WT-025-SD-01	N	Acenaphthene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	Z8
PR79-WT-025-SD-01	N	Acenaphthylene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	Z8
PR79-WT-025-SD-01	N	Anthracene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	Z8
PR79-WT-025-SD-01	N	Benzo(a)anthracene	0.0800	0.0140 J	0.0140 J	0.0140 J	TR/Z8
PR79-WT-025-SD-01	N	Benzo(a)pyrene	0.0800	0.0220 J	0.0220 J	0.0220 J	TR/Z8
PR79-WT-025-SD-01	N	Benzo(b)fluoranthene	0.0800	0.0360 J	0.0360 J	0.0360 J	TR/Z8
PR79-WT-025-SD-01	N	Benzo(g,h,i)perylene	0.0800	0.0160 J	0.0160 J	0.0160 J	TR/Z8
PR79-WT-025-SD-01	N	Benzo(k)fluoranthene	0.0800	0.0180 J	0.0180 J	0.0180 J	TR/Z8
PR79-WT-025-SD-01	N	Chrysene	0.0800	0.00940 J	0.00940 J	0.00940 J	TR/Z8
PR79-WT-025-SD-01	N	Dibenz(a,h)anthracene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	V1/Z8
PR79-WT-025-SD-01	N	Fluoranthene	0.0800	0.0310 J	0.0310 J	0.0310 J	TR/Z8
PR79-WT-025-SD-01	N	Fluorene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	Z8
PR79-WT-025-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0800	0.0120 J	0.0120 J	0.0120 J	TR/Z8
PR79-WT-025-SD-01	N	Naphthalene	0.0800	0.0400 U	0.0400 U	0.0400 UJ	Z8
PR79-WT-025-SD-01	N	Pentachlorophenol	0.400	0.200 U	0.200 U	0.200 UJ	Z8
PR79-WT-025-SD-01	N	Phenanthrene	0.0800	0.0180 J	0.0180 J	0.0180 J	TR/Z8
PR79-WT-025-SD-01	N	Pyrene	0.0800	0.0380 J	0.0380 J	0.0380 J	TR/Z8

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	Copper	0.0130	0.00239 J	0.00239 J	0.00540 U	B2
PR79-WT-025-SD-01	N	Cadmium	0.0170	0.00234 J	0.00234 J	0.00234 J	TR/Z8
PR79-WT-025-SD-01	N	Copper	0.150	0.0248 J	0.0248 J	0.0248 J	TR/Z8
PR79-WT-025-SD-01	N	Lead	0.00920	0.0660	0.0660	0.0660 J	Z8
PR79-WT-025-SD-01	N	Nickel	0.0650	0.0300 J	0.0300 J	0.0300 J	TR/Z8
PR79-WT-025-SD-01	N	Silver	0.0350	0.0140 U	0.0140 U	0.0140 UJ	Z8
PR79-WT-025-SD-01	N	Zinc	0.120	0.0343 J	0.0580 U	0.0580 UJ	L/Z8

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01-F	N	Aluminum	300	130 J	130 J	300 U	B2
PR79-WT-024-PW-01-F	N	Chromium	10.0	4.00 U	4.00 U	4.00 UJ	B3
PR79-WT-024-PW-01-F	N	Iron	100	56.2 J	56.2 J	80.0 U	B2
PR79-WT-024-SW-01-F	N	Aluminum	300	130 J	130 J	300 U	B2
PR79-WT-024-SW-01-F	N	Chromium	10.0	4.00 U	4.00 U	4.00 UJ	B3
PR79-WT-025-PW-01-F	N	Aluminum	300	96.0 J	96.0 J	100 U	B2
PR79-WT-025-PW-01-F	N	Chromium	10.0	4.00 U	4.00 U	4.00 UJ	B3
PR79-WT-025-SW-01-F	N	Aluminum	300	130 J	130 J	300 U	B2
PR79-WT-025-SW-01-F	N	Chromium	10.0	4.00 U	4.00 U	4.00 UJ	B3
PR79-WT-025-SW-01-F	N	Potassium	1000	911 J	911 J	1000 U	L

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	Copper	3.30	0.940 J	0.940 J	1.30 U	B2
PR79-WT-025-SD-01	N	Aluminum	120	18900	18900	18900 J	Z8
PR79-WT-025-SD-01	N	Barium	2.00	108	108	108 J	Z8
PR79-WT-025-SD-01	N	Calcium	41.0	9070	9070	9070 J	Z8
PR79-WT-025-SD-01	N	Chromium	4.10	23.3	23.3	23.3 J	Z8
PR79-WT-025-SD-01	N	Copper	10.0	6.61 J	6.61 J	10.0 UJ	B2/Z8
PR79-WT-025-SD-01	N	Iron	41.0	6900	6900	6900 J	Z8
PR79-WT-025-SD-01	N	Lead	2.00	45.3	45.3	45.3 J	Z8
PR79-WT-025-SD-01	N	Magnesium	41.0	1560	1560	1560 J	Z8
PR79-WT-025-SD-01	N	Manganese	2.00	59.0	59.0	59.0 J	Z8
PR79-WT-025-SD-01	N	Nickel	4.10	7.07	7.07	7.07 J	Z8
PR79-WT-025-SD-01	N	Potassium	410	1240	1240	1240 J	Z8
PR79-WT-025-SD-01	N	Silver	4.10	0.400 J	0.400 J	0.400 J	TR/Z8
PR79-WT-025-SD-01	N	Sodium	410	213 J	410 U	410 UJ	L/Z8
PR79-WT-025-SD-01	N	Vanadium	4.10	25.5	25.5	25.5 J	Z8
PR79-WT-025-SD-01	N	Zinc	8.10	14.0	14.0	14.0 J	Z8

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01	N	Chromium	10.0	2.50 J	2.50 J	2.50 J	TR/B3
PR79-WT-024-SW-01	N	Aluminum	300	198 J	198 J	300 U	B2
PR79-WT-024-SW-01	N	Chromium	10.0	4.00 U	4.00 U	4.00 UJ	B3
PR79-WT-025-PW-01	N	Chromium	10.0	0.820 J	0.820 J	0.820 J	TR/B3
PR79-WT-025-SW-01	N	Aluminum	300	174 J	174 J	300 U	B2
PR79-WT-025-SW-01	N	Chromium	10.0	4.00 U	4.00 U	4.00 UJ	B3

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01-F	N	Beryllium	1.00	0.0560 J	0.0560 J	0.200 U	B2
PR79-WT-024-PW-01-F	N	Cobalt	1.00	0.0710 J	0.0710 J	0.300 U	B2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01-F	N	Lead	1.00	0.500 U	0.500 U	0.500 UJ	B3
PR79-WT-024-SW-01-F	N	Beryllium	1.00	0.0460 J	0.0460 J	0.200 U	B2
PR79-WT-024-SW-01-F	N	Cobalt	1.00	0.150 J	0.150 J	0.300 U	B2
PR79-WT-024-SW-01-F	N	Lead	1.00	0.500 U	0.500 U	0.500 UJ	B3
PR79-WT-024-SW-01-F	N	Nickel	2.00	1.20 U	1.20 U	1.20 UJ	B3
PR79-WT-025-PW-01-F	N	Beryllium	1.00	0.0370 J	0.0370 J	0.200 U	B2
PR79-WT-025-PW-01-F	N	Cobalt	1.00	0.210 J	0.210 J	0.300 U	B2
PR79-WT-025-PW-01-F	N	Lead	1.00	0.110 J	0.110 J	0.500 U	B2
PR79-WT-025-SW-01-F	N	Beryllium	1.00	0.0480 J	0.0480 J	0.200 U	B2
PR79-WT-025-SW-01-F	N	Cobalt	1.00	0.210 J	0.210 J	0.300 U	B2
PR79-WT-025-SW-01-F	N	Lead	1.00	0.500 U	0.500 U	0.500 UJ	B3

Modified Qualifiers for test method SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	Thallium	0.130	0.0450 J	0.0450 J	0.0530 U	B2
PR79-WT-025-SD-01	N	Antimony	0.410	0.160 J	0.160 J	0.160 J	TR/Z8
PR79-WT-025-SD-01	N	Arsenic	2.00	3.30	3.30	3.30 J	Z8
PR79-WT-025-SD-01	N	Beryllium	0.410	4.89	4.89	4.89 J	Z8
PR79-WT-025-SD-01	N	Cadmium	0.410	0.681	0.681	0.681 J	Z8
PR79-WT-025-SD-01	N	Cobalt	0.410	2.38	2.38	2.38 J	Z8
PR79-WT-025-SD-01	N	Selenium	2.00	4.27	4.27	4.27 J	Z8
PR79-WT-025-SD-01	N	Thallium	0.410	0.510	0.510	0.510 J	Z8

Modified Qualifiers for test method SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01	N	Nickel	2.00	1.54 J	2.00 U	2.00 UJ	L/B3
PR79-WT-024-SW-01	N	Nickel	2.00	0.300 J	1.20 U	1.20 UJ	L/B3
PR79-WT-025-PW-01	N	Nickel	2.00	0.460 J	1.20 U	1.20 UJ	L/B3
PR79-WT-025-SW-01	N	Nickel	2.00	0.450 J	1.20 U	1.20 UJ	L/B3

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01-F	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-024-SW-01-F	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-025-PW-01-F	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-025-SW-01-F	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3

Modified Qualifiers for test method SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-PW-01	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-024-SW-01	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-025-PW-01	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3
PR79-WT-025-SW-01	N	Mercury	0.200	0.100 U	0.100 U	0.100 UJ	B3

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW7471B

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	Mercury	0.0510	0.0130 J	0.0130 J	0.0130 J	TR/B3
PR79-WT-025-SD-01	N	Mercury	0.100	0.130	0.130	0.130 J	Z8

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,1-Dichloroethane	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,1-Dichloroethene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	2-Butanone (MEK)	0.0500	0.100	0.100 J	0.100 J	I/S
PR79-WT-024-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-WT-024-SD-01	N	Acetone	0.0500	0.310	0.310 J	0.310 J	I/S
PR79-WT-024-SD-01	N	Benzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Bromodichloromethane	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Bromomethane	0.0200	0.0100 U	0.0100 UJ	0.0100 UJ	I/S
PR79-WT-024-SD-01	N	Carbon disulfide	0.0100	0.00200 J	0.00200 J	0.00200 J	I/TR/S
PR79-WT-024-SD-01	N	Chloroethane	0.0200	0.0100 U	0.0100 UJ	0.0100 UJ	I/S
PR79-WT-024-SD-01	N	Chloroform	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Chloromethane	0.0200	0.0100 U	0.0100 UJ	0.0100 UJ	I/S/V2
PR79-WT-024-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Dibromochloromethane	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Ethylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	m,p-Xylene	0.0200	0.0100 U	0.0100 UJ	0.0100 UJ	I/S
PR79-WT-024-SD-01	N	Methylene chloride	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-WT-024-SD-01	N	n-Butylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	n-Propylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	o-Xylene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	sec-Butylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	tert-Butyl alcohol	0.0500	0.0250 U	0.0250 UJ	0.0250 UJ	I/S
PR79-WT-024-SD-01	N	tert-Butylbenzene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Toluene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S
PR79-WT-024-SD-01	N	Trichloroethene (TCE)	0.0100	0.00500 U	0.00500 UJ	0.00500 UJ	I/S

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-024-SD-01	N	Vinyl chloride	0.0200	0.0100 U	0.0100 UJ	0.0100 UJ	I/S
PR79-WT-025-SD-01	N	1,1,1-Trichloroethane	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,1-Dichloroethane	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,1-Dichloroethene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,2,3-Trichlorobenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,2,4-Trichlorobenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,2,4-Trimethylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,2-Dichlorobenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,3,5-Trimethylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	1,3-Dichlorobenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	2-Butanone (MEK)	0.120	0.0640 J	0.0640 J	0.0640 J	TR/Z8
PR79-WT-025-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.120	0.0610 U	0.0610 U	0.0610 UJ	Z8
PR79-WT-025-SD-01	N	Acetone	0.120	0.410	0.410	0.410 J	Z8
PR79-WT-025-SD-01	N	Benzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Bromodichloromethane	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Bromomethane	0.0490	0.0240 U	0.0240 U	0.0240 UJ	Z8
PR79-WT-025-SD-01	N	Carbon disulfide	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Chloroethane	0.0490	0.0240 U	0.0240 U	0.0240 UJ	Z8
PR79-WT-025-SD-01	N	Chloroform	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Chloromethane	0.0490	0.0240 U	0.0240 U	0.0240 UJ	Z8
PR79-WT-025-SD-01	N	cis-1,2-Dichloroethene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Dibromochloromethane	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Ethylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Isopropylbenzene (Cumene)	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	m,p-Xylene	0.0490	0.0240 U	0.0240 U	0.0240 UJ	Z8
PR79-WT-025-SD-01	N	Methylene chloride	0.120	0.0610 U	0.0610 U	0.0610 UJ	Z8
PR79-WT-025-SD-01	N	n-Butylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	n-Propylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	o-Xylene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	sec-Butylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	tert-Butyl alcohol	0.120	0.0610 U	0.0610 U	0.0610 UJ	Z8
PR79-WT-025-SD-01	N	tert-Butylbenzene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Toluene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	trans-1,2-Dichloroethene	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Trichloroethene (TCE)	0.0240	0.0120 U	0.0120 U	0.0120 UJ	Z8
PR79-WT-025-SD-01	N	Vinyl chloride	0.0490	0.0240 U	0.0240 U	0.0240 UJ	Z8
TB-02-SDBG-01	TB	Chloromethane	0.0100	0.00500 U	0.00500 U	0.00500 UJ	V2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-025-SD-01	N	Total Organic Carbon	5300	270000	270000	270000 J	Z8

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
B3	CCB - Neg
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
S	Internal standard
T	Trip Blank
TR	Trace Level Detect
V1	ICV
V2	CCV
Z8	Low percent solids

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			0.8C
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		N7939 analyzed 5/11/2020 dibenzo (ah)anthracene 79.39% J-/UJ all samples
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		LCS: WG276941-2 had one surrogate outside QC window.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?		•		lab LOQs meet PQLs (but not all PALs) 15 analytes in 2 SW3550 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformance, samples analyzed.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?		•		The PQL standard analyzed 6/4/2020 14:04, recovered lead 128.4% recovery. The assoc sample PR79-WT-025-SD-01 detected Lead well above the PQL. PJ was used and the result was not qualified.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		see ADR outlier report
Did the ICSA have any non-target interferents above the MDL?	•			no action required
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBWNE05ICW1 prep blank detected K 110J ug/L as well as other analytes. All prep qualifications were correct with the exception of K in sample PR79-WT-025-SW-01-F which was negated at the QL due to prep blank.
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set./Batch MS/MSD according to prep log
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with the sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?		•		6 analytes in 1 AVS sample did not meet the requested RLs. 1 analyte in 1 SW3050B sample did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?		•		PQL issue.
Were any data rejected during the verification process?		•		

Data Validation Report for SN3272

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		see ADR outlier report
Did the ICSA have any non-target interferents above the MDL?	•			no action required
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set. Batch MS/MSD according to prep log.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?		•		lab LOQs match QAPP PQLs, (but not all PALs) 6 analytes in 2 SW3050B samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			CCB hits
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			PR79-WT-024-SW-01
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			CCB positive hits
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set. Batch MS/MSD according to prep log
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?		•		1 analyte in 1 sample did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.8C, Aq preserved, soil - rcvd in methanol
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		C5111 analyzed 5/4/2020: Chloromethane - 22.8%D
Were Internal Standard retention times and area criteria within method requirements?		•		see IS report
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		see surrogate report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			All blanks- ND
Were target analytes in the field blank less than MDL?		•		TB-02-SDBG-01: Acetone 0.0061J mg/Kg, Toluene 0.0019J mg/Kg
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		Lab LOQs same as QAPP LOQ, (but not all PALs met) 20 analytes in 2 SW5035 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			0.8C
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		24 hour HT not met. J results.
Was the Calibration within acceptance criteria?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			0.8C
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	Stage 2A
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		1 analytes in 1 sample did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3299

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3299
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-105-AS-01	SN3299-14	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-105-AS-01	SN3299-16	Solid	Field Sample/N			X					
PR79-SB-105-BS-01	SN3299-15	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-105-BS-01	SN3299-17	Solid	Field Sample/N			X					
PR79-SB-121-AS-01	SN3299-2	Solid	Field Sample/N	X	X		X	X			
PR79-SB-121-BS-01	SN3299-3	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-124-AS-01	SN3299-6	Solid	Field Sample/N	X	X		X	X			
PR79-SB-124-BS-01	SN3299-7	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-126-AS-01	SN3299-8	Solid	Field Sample/N	X	X		X	X			
PR79-SB-126-BS-01	SN3299-9	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-128-AS-01	SN3299-10	Solid	Field Sample/N	X	X		X	X			
PR79-SB-128-BS-01	SN3299-11	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-130-AS-01	SN3299-12	Solid	Field Sample/N	X	X		X	X			
PR79-SB-130-BS-01	SN3299-13	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-FD06-01	SN3299-5	Solid	Field Duplicate/FD	X	X		X	X	X		
PR79-SOBG-FD05-01	SN3299-4	Solid	Field Duplicate/FD	X	X		X	X			
TB-02-SOBG-01	SN3299-1	Solid	Trip Blank/TB						X		

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3299. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 27 results (3.06%) out of the 881 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 09, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG276926-1 (LB)/ WG276926-1	Fluoranthene	0.001900	< 0.0018	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	Fluoranthene	0.0240	0.00550 J	0.0120 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG276804-2 (BS)/ WG276804-2	1,4-Dioxane (p-Dioxane)	28.49	30 - 150	10 - 150	percent	J/UJ	C	
WG276926-2 (BS)/ WG276926-2	1,4-Dioxane (p-Dioxane)	27.29	30 - 150	10 - 150	percent	J/UJ	C	
WG277157-2 (BS)/ WG277157-2	1,4-Dioxane (p-Dioxane)	27.89	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0590 UL	0.0590 UJ		mg/kg	C
PR79-SB-105-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-121-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0610 UL	0.0610 UJ		mg/kg	C
PR79-SB-121-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00130 JL	0.00130 J	-	mg/kg	C/TR
PR79-SB-124-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0590 UL	0.0590 UJ		mg/kg	C
PR79-SB-124-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0520 ULMM	0.0520 UJ		mg/kg	C/M
PR79-SB-126-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00150 JL	0.00150 J	-	mg/kg	C/TR
PR79-SB-126-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0510 UL	0.0510 UJ		mg/kg	C
PR79-SB-128-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 UL	0.0560 UJ		mg/kg	C
PR79-SB-128-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0990	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-130-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 UL	0.0560 UJ		mg/kg	C
PR79-SB-130-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00120 JL	0.00120 J	-	mg/kg	C/TR
PR79-SB-FD06-01	FD	1,4-Dioxane (p-Dioxane)	0.0920	0.00150 JL	0.00150 J	-	mg/kg	C/TR
PR79-SOBG-FD05-01	FD	1,4-Dioxane (p-Dioxane)	0.110	0.0550 UL	0.0550 UJ		mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-124-BS-01 (MS)/ WG276804-3	1,4-Dioxane (p-Dioxane)	27.38	30 - 150	10 - 150	percent	J/UJ	M	
PR79-SB-124-BS-01 (SD)/ WG276804-4	1,4-Dioxane (p-Dioxane)	21.43	30 - 150	10 - 150	percent	J/UJ	M	
PR79-SB-124-BS-01 (SD)/ WG276804-4	Benzo(a)pyrene	48.57	50 - 125	10 - 125	percent	J/UJ	M	
PR79-SB-124-BS-01 (SD)/ WG276804-4	Benzo (k)fluoranthene	55.71	56 - 123	10 - 123	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-124-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0520 ULMM	0.0520 UJ		mg/kg	C/M
PR79-SB-124-BS-01	N	Benzo(a)pyrene	0.0210	0.0100 UM	0.0100 UJ		mg/kg	M
PR79-SB-124-BS-01	N	Benzo(k)fluoranthene	0.0210	0.0100 UM	0.0100 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Barium	0.04400	< 0.025	< 0.5	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Chromium	0.06300	< 0.026	< 1	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Zinc	0.1800	< 0.17	< 2	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Iron	1.800	< 1.4	< 10	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Calcium	2.200	< 1.8	< 10	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Sodium	3.300	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	Sodium	100	50.3 J	100 U		mg/kg	L
PR79-SB-121-AS-01	N	Sodium	93.0	57.7 J	93.0 U		mg/kg	L
PR79-SB-124-AS-01	N	Sodium	83.0	80.2 J	83.0 U		mg/kg	L
PR79-SB-128-AS-01	N	Sodium	110	46.0 J	56.0 U		mg/kg	L
PR79-SB-130-AS-01	N	Sodium	120	38.3 J	62.0 U		mg/kg	L
PR79-SB-130-BS-01	N	Sodium	110	78.6 J	110 U		mg/kg	L
PR79-SOBG-FD05-01	FD	Sodium	73.0	40.8 J	73.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE06IMS1 (LB)/ PBSNE06IMS1	Beryllium	0.006600	< 0.0041	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-105-BS-01 (N)/ SN3299-15	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	125.0	79 - 119	10 - 119	percent	J/None	I	
PR79-SB-124-BS-01 (N)/ SN3299-7	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	123.0	79 - 119	10 - 119	percent	J/None	I	
PR79-SB-126-BS-01 (N)/ SN3299-9	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	120.0	79 - 119	10 - 119	percent	J/None	I	
PR79-SB-130-BS-01 (N)/ SN3299-13	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	123.0	79 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-130-BS-01	N	Acetone	0.0210	0.00860 J	0.00860 J	+	mg/kg	I/TR
PR79-SB-130-BS-01	N	Toluene	0.00420	0.00160 J	0.00160 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-105-AS-01 (N)/ SN3299-14		45.17	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	Fluoranthene	0.0240	0.00550 J	0.0120 U		mg/kg	L
PR79-SB-105-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0590 UL	0.0590 UJ		mg/kg	C
PR79-SB-105-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-121-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0610 UL	0.0610 UJ		mg/kg	C
PR79-SB-121-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00130 JL	0.00130 J	-	mg/kg	C/TR
PR79-SB-124-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.0590 UL	0.0590 UJ		mg/kg	C
PR79-SB-124-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0520 ULMM	0.0520 UJ		mg/kg	C/M
PR79-SB-124-BS-01	N	Benzo(a)pyrene	0.0210	0.0100 UM	0.0100 UJ		mg/kg	M
PR79-SB-124-BS-01	N	Benzo(k)fluoranthene	0.0210	0.0100 UM	0.0100 UJ		mg/kg	M
PR79-SB-126-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00150 JL	0.00150 J	-	mg/kg	C/TR
PR79-SB-126-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0510 UL	0.0510 UJ		mg/kg	C
PR79-SB-128-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 UL	0.0560 UJ		mg/kg	C
PR79-SB-128-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0990	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-130-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0560 UL	0.0560 UJ		mg/kg	C
PR79-SB-130-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00120 JL	0.00120 J	-	mg/kg	C/TR
PR79-SB-FD06-01	FD	1,4-Dioxane (p-Dioxane)	0.0920	0.00150 JL	0.00150 J	-	mg/kg	C/TR
PR79-SOBG-FD05-01	FD	1,4-Dioxane (p-Dioxane)	0.110	0.0550 UL	0.0550 UJ		mg/kg	C

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	Sodium	100	50.3 J	100 U		mg/kg	L
PR79-SB-121-AS-01	N	Sodium	93.0	57.7 J	93.0 U		mg/kg	L
PR79-SB-124-AS-01	N	Sodium	83.0	80.2 J	83.0 U		mg/kg	L
PR79-SB-128-AS-01	N	Sodium	110	46.0 J	56.0 U		mg/kg	L
PR79-SB-130-AS-01	N	Sodium	120	38.3 J	62.0 U		mg/kg	L
PR79-SB-130-BS-01	N	Sodium	110	78.6 J	110 U		mg/kg	L
PR79-SOBG-FD05-01	FD	Sodium	73.0	40.8 J	73.0 U		mg/kg	L

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-130-BS-01	N	Acetone	0.0210	0.00860 J	0.00860 J	+	mg/kg	I/TR
PR79-SB-130-BS-01	N	Toluene	0.00420	0.00160 J	0.00160 J	+	mg/kg	I/TR

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-105-AS-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Results with Modified Qualifiers

No qualifiers associated with this sample delivery group were modified manually.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report: WG276926-1 Fluoranthene
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		See outlier report; 1,4-dioxance %R below criteria in all three LCS
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report, some %R below criteria
Was the MS/MSD RPD within project acceptance limits?		•		Some RPDs outside criteria; no quals since parent sample results ND
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-121-BS-01 / PR79-SB-FD06-01 PR79-SB-121-AS-01 / PR79-SOBG-FD05-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCVs analyzed past 12h tune time. ICV nonconformance noted is not assoc with reported results. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		Case narrative notes that ICV did not meet criteria; analysis should have been stopped until acceptable ICV was analyzed. Note no samples were assoc with this ICV.
Were any data rejected during the verification process?		•		

Data Validation Report for SN3299

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			SPLP analyses on correct samples/analytes
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			SPLP analyses on correct samples/analytes
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report: Ba, Ca, Cr, Fe, Na, Zn
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-121-AS-01 / PR79-SOBG-FD05-01PR79-SB-121-BS-01 / PR79-SB-FD06-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3299

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report: Be
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-121-AS-01 / PR79-SOBG-FD05-01PR79-SB-121-BS-01 / PR79-SB-FD06-01 criteria met
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report: SW6020A/SW3050B: 12 analytes in 5 samples did not meet PALs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3299

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-121-AS-01 / PR79-SOBG-FD05-01PR79-SB-121-BS-01 / PR79-SB-FD06-01 criteria met
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report: SW7471B/METHOD 13 analytes in 13 samples did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report, BFB above criteria in 4 samples
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			TB-02-SOBG-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-121-BS-01 / PR79-SB-FD06-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV low for ClMethane - assoc ND results PR79-SB-121-BS-01, PR79-SB-128-BS-01 may be biased low. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3299

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		See outlier report. Note holding time exceedance was not noted in case narrative.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3299

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3355

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3355
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-102-AS-01	SN3355-12	Solid	Field Sample/N			X					
PR79-SB-102-AS-01	SN3355-2	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-102-BS-01	SN3355-13	Solid	Field Sample/N			X					
PR79-SB-102-BS-01	SN3355-3	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-104-AS-01	SN3355-16	Solid	Field Sample/N			X					
PR79-SB-104-AS-01	SN3355-6	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-104-BS-01	SN3355-17	Solid	Field Sample/N			X					
PR79-SB-104-BS-01	SN3355-7	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-107-AS-01	SN3355-14	Solid	Field Sample/N			X					
PR79-SB-107-AS-01	SN3355-4	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-107-BS-01	SN3355-15	Solid	Field Sample/N			X					
PR79-SB-107-BS-01	SN3355-5	Solid	Field Sample/N	X	X		X	X	X		
TB-03-SOBG-01	SN3355-1	Solid	Trip Blank/TB						X		

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3355. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 27 results (6.57%) out of the 411 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 11, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277068-2 (BS)/ WG277068-2	1,4-Dioxane (p-Dioxane)	24.59	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00150 JL	0.00150 J	-	mg/kg	C/TR
PR79-SB-102-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00130 JL	0.00130 J	-	mg/kg	C/TR
PR79-SB-104-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-104-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00160 JL	0.00160 J	-	mg/kg	C/TR
PR79-SB-107-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-SB-107-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00230 JL	0.00230 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Barium	0.04400	< 0.025	< 0.5	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Chromium	0.06300	< 0.026	< 1	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Zinc	0.1800	< 0.17	< 2	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Iron	1.800	< 1.4	< 10	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Calcium	2.200	< 1.8	< 10	mg/kg	U/None	L	
PBSNE06ICS1 (LB)/ PBSNE06ICS1	Sodium	3.300	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	Sodium	87.0	70.8 J	87.0 U		mg/kg	L
PR79-SB-104-AS-01	N	Sodium	92.0	43.2 J	46.0 U		mg/kg	L
PR79-SB-107-AS-01	N	Sodium	100	55.2 J	100 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Iron	-1312	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Calcium	-18.38	81 - 116	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Aluminum	-677.4	74 - 119	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Magnesium	11.05	78 - 115	30 - 125	percent	J/X	M	
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Potassium	54.13	81 - 116	30 - 125	percent	J/UJ	M	
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Manganese	66.30	84 - 114	30 - 125	percent	J/UJ	M	
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Aluminum	-191.8	74 - 119	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Iron	-318.2	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Manganese	116.8	84 - 114	30 - 125	percent	J/None	M	
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Calcium	131.4	81 - 116	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Magnesium	51.09	78 - 115	30 - 125	percent	J/UJ	M	
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Potassium	72.73	81 - 116	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-104-BS-01	N	Magnesium	11.0	1960 NA	1960 J	-	mg/kg	M
PR79-SB-104-BS-01	N	Potassium	110	2230 N	2230 J	-	mg/kg	M
PR79-SB-104-BS-01	N	Manganese	0.550	144 NA	144 J		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE06IMS1 (LB)/ PBSNE06IMS1	Beryllium	0.006600	< 0.0041	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-104-BS-01 (SD)/ SN3355-007P	Antimony	35.05	72 - 124	30 - 125	percent	J/UJ	M	
PR79-SB-104-BS-01 (MS)/ SN3355-007S	Antimony	33.64	72 - 124	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-104-BS-01	N	Antimony	0.110	0.0550 UN	0.0550 UJ		mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Serial dilution

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
SN3355-007L	Cobalt	13.10			%d	J/UJ	A	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Serial dilution for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	Cobalt	0.0870	3.04	3.04 J		mg/kg	A
PR79-SB-102-BS-01	N	Cobalt	0.0910	3.47	3.47 J		mg/kg	A
PR79-SB-104-AS-01	N	Cobalt	0.0920	2.58	2.58 J		mg/kg	A
PR79-SB-104-BS-01	N	Cobalt	0.110	2.38 E	2.38 J		mg/kg	A
PR79-SB-107-AS-01	N	Cobalt	0.100	3.99	3.99 J		mg/kg	A
PR79-SB-107-BS-01	N	Cobalt	0.0760	1.84	1.84 J		mg/kg	A

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-102-BS-01 (N)/ SN3355-3	Dibromofluoromethane	120.0	78 - 119	10 - 119	percent	J/None	I	
PR79-SB-104-BS-01 (N)/ SN3355-7	Dibromofluoromethane	123.0	78 - 119	10 - 119	percent	J/None	I	
PR79-SB-107-BS-01 (N)/ SN3355-5	Dibromofluoromethane	125.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-BS-01	N	Methylene chloride	0.0190	0.0120 J	0.0120 J	+	mg/kg	I/TR
PR79-SB-104-BS-01	N	Methylene chloride	0.0200	0.00740 J	0.00740 J	+	mg/kg	I/TR
PR79-SB-107-BS-01	N	Methylene chloride	0.0230	0.00890 J	0.00890 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-104-BS-01 (STD)	1,2-Dichloroethane-d4	137.0	71 - 136	10 - 136	percent	J/None	I	
PR79-SB-107-BS-01 (STD)	1,2-Dichloroethane-d4	141.0	71 - 136	10 - 136	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-102-AS-01 (N)/ SN3355-2		97.98	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-104-AS-01 (N)/ SN3355-6		73.82	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-107-AS-01 (N)/ SN3355-4		95.98	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	pH	0.100	6.10	6.10 J	-	ph units	H2
PR79-SB-104-AS-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2
PR79-SB-107-AS-01	N	pH	0.100	5.80	5.80 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00150 JL	0.00150 J	-	mg/kg	C/TR
PR79-SB-102-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00130 JL	0.00130 J	-	mg/kg	C/TR
PR79-SB-104-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-104-BS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00160 JL	0.00160 J	-	mg/kg	C/TR
PR79-SB-107-AS-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-SB-107-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00230 JL	0.00230 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	Sodium	87.0	70.8 J	87.0 U		mg/kg	L
PR79-SB-104-AS-01	N	Sodium	92.0	43.2 J	46.0 U		mg/kg	L
PR79-SB-104-BS-01	N	Magnesium	11.0	1960 NA	1960 J	-	mg/kg	M
PR79-SB-104-BS-01	N	Potassium	110	2230 N	2230 J	-	mg/kg	M
PR79-SB-104-BS-01	N	Manganese	0.550	144 NA	144 J		mg/kg	M
PR79-SB-107-AS-01	N	Sodium	100	55.2 J	100 U		mg/kg	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	Cobalt	0.0870	3.04	3.04 J		mg/kg	A
PR79-SB-102-BS-01	N	Cobalt	0.0910	3.47	3.47 J		mg/kg	A
PR79-SB-104-AS-01	N	Cobalt	0.0920	2.58	2.58 J		mg/kg	A
PR79-SB-104-BS-01	N	Cobalt	0.110	2.38 E	2.38 J		mg/kg	A
PR79-SB-104-BS-01	N	Antimony	0.110	0.0550 UN	0.0550 UJ		mg/kg	M
PR79-SB-107-AS-01	N	Cobalt	0.100	3.99	3.99 J		mg/kg	A
PR79-SB-107-BS-01	N	Cobalt	0.0760	1.84	1.84 J		mg/kg	A

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-BS-01	N	Methylene chloride	0.0190	0.0120 J	0.0120 J	+	mg/kg	I/TR
PR79-SB-104-BS-01	N	Methylene chloride	0.0200	0.00740 J	0.00740 J	+	mg/kg	I/TR
PR79-SB-107-BS-01	N	Methylene chloride	0.0230	0.00890 J	0.00890 J	+	mg/kg	I/TR

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-102-AS-01	N	pH	0.100	6.10	6.10 J	-	ph units	H2
PR79-SB-104-AS-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2
PR79-SB-107-AS-01	N	pH	0.100	5.80	5.80 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-102-AS-01	N	Cobalt	0.0870	3.04	3.04	3.04 J	A
PR79-SB-102-BS-01	N	Cobalt	0.0910	3.47	3.47	3.47 J	A
PR79-SB-104-AS-01	N	Cobalt	0.0920	2.58	2.58	2.58 J	A
PR79-SB-104-BS-01	N	Cobalt	0.110	2.38 E	2.38	2.38 J	A
PR79-SB-107-AS-01	N	Cobalt	0.100	3.99	3.99	3.99 J	A
PR79-SB-107-BS-01	N	Cobalt	0.0760	1.84	1.84	1.84 J	A

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
A	Serial dilution
C	LCS Recovery
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB in this data set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		See outlier report: 1,4-dioxane below criteria
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	no MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of 2A validation: CCVs analyzed outside of 12h window. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		Additional consecutive passing CCVs should have been analyzed based on CCV nonconformance.
Were any data rejected during the verification process?		•		

Data Validation Report for SN3355

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			SPLP analyses correct per samples/analytes.
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report: Ba, Ca, Cr, Fe, Na, Zn
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report: %R outside criteria for Al, Ca, Fe - no action since sample >4X spiked amount. See outlier report for %Rs below criteria (Mg, Mn, K) and qualifications. PDS below criteria for Mg, Mn; results would be qualified (J-/UJ). No quals for low PDS for Al, Ca, Fe since sample >4X spiked amount.
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?		•		Low PDS %R for Mg, Mn. See note in MS %R.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	No lab dup, see MS/MSD precision
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3355

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report: Be
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		See outlier report: low MS %R Sb, PDS ok
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?		•		See outlier report: qualify for Co %D
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		SW6020A/SW3050B: 4 analytes in 2 samples did not meet PALs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS for Hg
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		SW7471B/METHOD: 2 analytes in 2 samples did not meet PALs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report, %Rs above criteria in 3 samples.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			TB-03-SOBG-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of 2A validation: Case narrative notes CCV %D above criteria for Bromomethane and Acetone; assoc results ND. No qualifications would be required.
Were DoD QSM corrective actions followed if deviations were noted?		•		Two additional consecutive passing CCVs were not analyzed per DoD following CCV outside criteria.
Were any data rejected during the verification process?		•		

Data Validation Report for SN3355

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		See outlier report
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3358

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3358
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-029-PW-01	SN3358-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-029-PW-01-F	SN3358-4		Field Sample/N					X		X		X				
PR79-WT-030-PW-01	SN3358-9		Field Sample/N	X		X	X		X		X			X		
PR79-WT-030-PW-01-F	SN3358-10		Field Sample/N					X		X		X				
PR79-WT-031-PW-01	SN3358-15		Field Sample/N	X		X	X		X		X			X		
PR79-WT-031-PW-01-F	SN3358-16		Field Sample/N					X		X		X				
PR79-WT-029-SD-01	SN3358-5	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-029-SD-01	SN3358-6	Solid	Field Sample/N		X		X									
PR79-WT-030-SD-01	SN3358-11	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-030-SD-01	SN3358-12	Solid	Field Sample/N		X		X									
PR79-WT-031-SD-01	SN3358-17	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-031-SD-01	SN3358-18	Solid	Field Sample/N		X		X									
TB-04-SDBG-01	SN3358-24	Solid	Trip Blank/TB											X		
PWBG-EB-01-01	SN3358-22	Water	Equipment Blank/EB	X		X	X		X		X			X		
PWBG-EB-01-01-F	SN3358-23	Water	Equipment Blank/EB					X		X		X				
SDBG-EB-01-01	SN3358-19	Water	Equipment Blank/EB											X		
TB-04-SWBG-01	SN3358-25	Water	Trip Blank/TB											X		

Data Validation Report for SN3358

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-029-PW-01	SN3358-3		Field Sample/N	X
PR79-WT-029-PW-01-F	SN3358-4		Field Sample/N	
PR79-WT-030-PW-01	SN3358-9		Field Sample/N	X
PR79-WT-030-PW-01-F	SN3358-10		Field Sample/N	
PR79-WT-031-PW-01	SN3358-15		Field Sample/N	X
PR79-WT-031-PW-01-F	SN3358-16		Field Sample/N	
PR79-WT-029-SD-01	SN3358-5	Solid	Field Sample/N	
PR79-WT-029-SD-01	SN3358-6	Solid	Field Sample/N	
PR79-WT-030-SD-01	SN3358-11	Solid	Field Sample/N	
PR79-WT-030-SD-01	SN3358-12	Solid	Field Sample/N	
PR79-WT-031-SD-01	SN3358-17	Solid	Field Sample/N	
PR79-WT-031-SD-01	SN3358-18	Solid	Field Sample/N	
TB-04-SDBG-01	SN3358-24	Solid	Trip Blank/TB	
PWBG-EB-01-01	SN3358-22	Water	Equipment Blank/EB	X
PWBG-EB-01-01-F	SN3358-23	Water	Equipment Blank/EB	
SDBG-EB-01-01	SN3358-19	Water	Equipment Blank/EB	
TB-04-SWBG-01	SN3358-25	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3358. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Equipment Blank
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 136 results (16.85%) out of the 807 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	Full scan and SIM
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PWBG-EB-01-01 (EB)/ SN3358-22	Chrysene	0.04300	< 0.035	< 0.19	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277071-1 (LB)/ WG277071-1	Chrysene	0.05800	< 0.036	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Chrysene	0.190	0.0430 J	0.0950 U		ug/l	L
PR79-WT-030-PW-01	N	Chrysene	0.190	0.0400 J	0.0960 U		ug/l	L
PR79-WT-031-PW-01	N	Chrysene	0.190	0.0350 J	0.0950 U		ug/l	L
PWBG-EB-01-01	EB	Chrysene	0.190	0.0430 J	0.0970 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277071-2 (BS)/ WG277071-2	Pentachlorophenol	26.00	36 - 141	10 - 141	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-030-PW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-031-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PWBG-EB-01-01	EB	Pentachlorophenol	0.970	0.480 UL	0.480 UJ		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277068-2 (BS)/ WG277068-2	1,4-Dioxane (p-Dioxane)	24.59	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	1,4-Dioxane (p-Dioxane)	0.0920	0.00290 JL	0.00290 J	-	mg/kg	C/TR
PR79-WT-030-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00370 JL	0.00370 J	-	mg/kg	C/TR
PR79-WT-031-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00310 JL	0.00310 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PWBG-EB-01-01-F (EB)/ SN3358-23	Barium	0.6800	< 0.23	< 5	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Copper	1.000	< 0.63	< 25	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Zinc	1.000	< 0.72	< 20	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Magnesium	18.00	< 7.8	< 100	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Aluminum	32.00	< 15	< 300	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Sodium	456.0	< 24	< 1000	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Iron	5.600	< 5.4	< 100	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Potassium	72.00	< 41	< 1000	ug/l	U/None	V	
PWBG-EB-01-01-F (EB)/ SN3358-23	Calcium	96.00	< 11	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	V
PR79-WT-029-PW-01	N	Zinc	20.0	5.60 J	10.0 U		ug/l	V
PR79-WT-029-PW-01-F	N	Copper	25.0	1.70 J	10.0 U		ug/l	V
PR79-WT-029-PW-01-F	N	Zinc	20.0	7.00 J	10.0 U		ug/l	V
PR79-WT-030-PW-01	N	Copper	25.0	1.50 J	10.0 U		ug/l	V
PR79-WT-030-PW-01	N	Zinc	20.0	4.40 J	10.0 U		ug/l	V
PR79-WT-030-PW-01-F	N	Copper	25.0	1.30 J	10.0 U		ug/l	V
PR79-WT-030-PW-01-F	N	Zinc	20.0	4.70 J	10.0 U		ug/l	V
PR79-WT-031-PW-01	N	Copper	25.0	4.10 J	10.0 U		ug/l	V
PR79-WT-031-PW-01	N	Zinc	20.0	19.1 J	20.0 U		ug/l	V
PR79-WT-031-PW-01-F	N	Copper	25.0	0.960 J	10.0 U		ug/l	V
PR79-WT-031-PW-01-F	N	Zinc	20.0	2.30 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05ICW2 (LB)	Barium	0.3200	< 0.23	< 3	ug/l	None/None	L	
PBWNE05ICW2 (LB)	Potassium	100.0	< 41	< 500	ug/l	None/None	L	
PBWNE05ICW2 (LB)	Aluminum	16.00	< 15	< 100	ug/l	None/None	L	
PBWNE05ICW2 (LB)	Sodium	32.00	< 24	< 500	ug/l	None/None	L	
PBWNE05ICW2 (LB)	Magnesium	9.900	< 7.8	< 80	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01-F	N	Potassium	1000	467 J	500 U		ug/l	L
PR79-WT-030-PW-01-F	N	Potassium	1000	594 J	1000 U		ug/l	L
PR79-WT-031-PW-01-F	N	Potassium	1000	932 J	1000 U		ug/l	L
PWBG-EB-01-01-F	EB	Aluminum	300	32.0 J	100 U		ug/l	L
PWBG-EB-01-01-F	EB	Barium	5.00	0.680 J	3.00 U		ug/l	L
PWBG-EB-01-01-F	EB	Magnesium	100	18.0 J	80.0 U		ug/l	L
PWBG-EB-01-01-F	EB	Potassium	1000	72.0 J	500 U		ug/l	L
PWBG-EB-01-01-F	EB	Sodium	1000	456 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS1 (LB)/ PBSNE08ICS1	Zinc	0.001780	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-031-SD-01	N	Zinc	0.00962	0.00962	0.00962 U		umoles/ g	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Lead	0.09800	< 0.087	< 0.5	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Aluminum	1.000	< 0.71	< 30	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Potassium	13.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Sodium	2.800	< 1.5	< 100	mg/kg	U/None	L	
PBSNE08ICS2 (LB)/ PBSNE08ICS2	Calcium	4.000	< 1.8	< 10	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	Sodium	98.0	35.9 J	49.0 U		mg/kg	L
PR79-WT-030-SD-01	N	Sodium	120	24.2 J	63.0 U		mg/kg	L
PR79-WT-031-SD-01	N	Sodium	110	59.0 J	110 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PWBG-EB-01-01 (EB)/ SN3358-22	Copper	0.7800	< 0.63	< 25	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Barium	1.200	< 0.23	< 5	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Zinc	1.200	< 0.72	< 20	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Calcium	110.0	< 11	< 100	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Magnesium	17.00	< 7.8	< 100	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Aluminum	29.00	< 15	< 300	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Sodium	397.0	< 24	< 1000	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Potassium	48.00	< 41	< 1000	ug/l	U/None	V	
PWBG-EB-01-01 (EB)/ SN3358-22	Iron	8.100	< 5.4	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	V
PR79-WT-029-PW-01	N	Zinc	20.0	5.60 J	10.0 U		ug/l	V
PR79-WT-029-PW-01-F	N	Copper	25.0	1.70 J	10.0 U		ug/l	V
PR79-WT-029-PW-01-F	N	Zinc	20.0	7.00 J	10.0 U		ug/l	V
PR79-WT-030-PW-01	N	Copper	25.0	1.50 J	10.0 U		ug/l	V
PR79-WT-030-PW-01	N	Zinc	20.0	4.40 J	10.0 U		ug/l	V
PR79-WT-030-PW-01-F	N	Copper	25.0	1.30 J	10.0 U		ug/l	V
PR79-WT-030-PW-01-F	N	Zinc	20.0	4.70 J	10.0 U		ug/l	V
PR79-WT-031-PW-01	N	Copper	25.0	4.10 J	10.0 U		ug/l	V
PR79-WT-031-PW-01	N	Zinc	20.0	19.1 J	20.0 U		ug/l	V
PR79-WT-031-PW-01-F	N	Copper	25.0	0.960 J	10.0 U		ug/l	V
PR79-WT-031-PW-01-F	N	Zinc	20.0	2.30 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05ICW2 (LB)/ PBWNE05ICW2	Barium	0.3200	< 0.23	< 5	ug/l	U/None	L	
PBWNE05ICW2 (LB)/ PBWNE05ICW2	Potassium	100.0	< 41	< 1000	ug/l	U/None	L	
PBWNE05ICW2 (LB)/ PBWNE05ICW2	Aluminum	16.00	< 15	< 300	ug/l	U/None	L	
PBWNE05ICW2 (LB)/ PBWNE05ICW2	Sodium	32.00	< 24	< 1000	ug/l	U/None	L	
PBWNE05ICW2 (LB)/ PBWNE05ICW2	Magnesium	9.900	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Potassium	1000	300 J	500 U		ug/l	L
PR79-WT-030-PW-01	N	Potassium	1000	749 J	1000 U		ug/l	L
PWBG-EB-01-01	EB	Aluminum	300	29.0 J	100 U		ug/l	L
PWBG-EB-01-01	EB	Barium	5.00	1.20 J	3.00 U		ug/l	L
PWBG-EB-01-01	EB	Magnesium	100	17.0 J	80.0 U		ug/l	L
PWBG-EB-01-01	EB	Potassium	1000	48.0 J	500 U		ug/l	L
PWBG-EB-01-01	EB	Sodium	1000	397 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05IMW2 (LB)	Lead	0.1000	< 0.0049	< 0.2	ug/l	None/None	L	
PBWNE05IMW2 (LB)	Antimony	0.1000	< 0.061	< 0.2	ug/l	None/None	L	
PBWNE05IMW2 (LB)	Beryllium	0.1100	< 0.0077	< 0.2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01-F	N	Beryllium	1.00	0.210 J	1.00 U		ug/l	L
PR79-WT-029-PW-01-F	N	Lead	1.00	0.921 J	1.00 U		ug/l	L
PR79-WT-030-PW-01-F	N	Antimony	1.00	0.0620 J	0.500 U		ug/l	L
PR79-WT-030-PW-01-F	N	Beryllium	1.00	0.190 J	0.200 U		ug/l	L
PR79-WT-030-PW-01-F	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-031-PW-01-F	N	Antimony	1.00	0.0980 J	0.500 U		ug/l	L
PR79-WT-031-PW-01-F	N	Beryllium	1.00	0.140 J	0.200 U		ug/l	L
PR79-WT-031-PW-01-F	N	Lead	1.00	0.751 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE08IMS2 (LB)/ PBSNE08IMS2	Cadmium	0.008300	< 0.0076	< 0.1	mg/kg	U/None	L	
PBSNE08IMS2 (LB)/ PBSNE08IMS2	Beryllium	0.009100	< 0.0041	< 0.1	mg/kg	U/None	L	
PBSNE08IMS2 (LB)/ PBSNE08IMS2	Cobalt	0.01800	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	Cadmium	0.0980	0.0680 J	0.0980 U		mg/kg	L
PR79-WT-030-SD-01	N	Cadmium	0.120	0.0440 J	0.120 U		mg/kg	L
PR79-WT-031-SD-01	N	Cadmium	0.110	0.0460 J	0.110 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE05IMW2 (LB)/ PBWNE05IMW2	Antimony	0.1000	< 0.054	< 1	ug/l	U/None	L	
PBWNE05IMW2 (LB)/ PBWNE05IMW2	Lead	0.1000	< 0.074	< 1	ug/l	U/None	L	
PBWNE05IMW2 (LB)/ PBWNE05IMW2	Beryllium	0.1100	< 0.034	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Antimony	1.00	0.0980 J	0.500 U		ug/l	L
PR79-WT-029-PW-01	N	Beryllium	1.00	0.230 J	1.00 U		ug/l	L
PR79-WT-029-PW-01	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-030-PW-01	N	Beryllium	1.00	0.220 J	1.00 U		ug/l	L
PR79-WT-030-PW-01	N	Lead	1.00	0.970 J	1.00 U		ug/l	L
PR79-WT-031-PW-01	N	Antimony	1.00	0.0910 J	0.500 U		ug/l	L
PR79-WT-031-PW-01	N	Beryllium	1.00	0.869 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-029-SD-01 (N)/ SN3358-5	Dibromofluoromethane	124.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-030-SD-01 (N)/ SN3358-11	Dibromofluoromethane	123.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-030-SD-01 (N)/ SN3358-11	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	72.80	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-031-SD-01 (N)/ SN3358-17	Dibromofluoromethane	127.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-031-SD-01 (N)/ SN3358-17	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	67.70	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	Acetone	0.0200	0.0190 J	0.0190 J	+	mg/kg	I/TR
PR79-WT-030-SD-01	N	1,1,1-Trichloroethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,1-Dichloroethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,1-Dichloroethene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2,3-Trichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2,4-Trichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2,4-Trimethylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2-Dichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,3,5-Trimethylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,3-Dichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	2-Butanone (MEK)	0.0400	0.0220 J	0.0220 J		mg/kg	I/TR
PR79-WT-030-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0400	0.0200 U	0.0200 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Acetone	0.0400	0.100	0.100 J		mg/kg	I
PR79-WT-030-SD-01	N	Benzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Bromodichloromethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Bromomethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Carbon disulfide	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Chloroethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Chloroform	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Chloromethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	cis-1,2-Dichloroethene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Dibromochloromethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Ethylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-030-SD-01	N	Isopropylbenzene (Cumene)	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	m,p-Xylene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Methylene chloride	0.0400	0.0200 U	0.0200 UJ		mg/kg	I
PR79-WT-030-SD-01	N	n-Butylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	n-Propylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	o-Xylene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	sec-Butylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	tert-Butyl alcohol	0.0400	0.0200 U	0.0200 UJ		mg/kg	I
PR79-WT-030-SD-01	N	tert-Butylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Toluene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	trans-1,2-Dichloroethene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Trichloroethene (TCE)	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Vinyl chloride	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,1-Dichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2,3-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2,4-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2,4-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,3,5-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,3-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	2-Butanone (MEK)	0.0220	0.0110 J	0.0110 J		mg/kg	I/TR
PR79-WT-031-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Acetone	0.0220	0.0380	0.0380 J		mg/kg	I
PR79-WT-031-SD-01	N	Benzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Bromodichloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Bromomethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Carbon disulfide	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Chloroethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Chloroform	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Chloromethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	cis-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Dibromochloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Ethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Isopropylbenzene (Cumene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	m,p-Xylene	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Methylene chloride	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-031-SD-01	N	n-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-031-SD-01	N	n-Propylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	o-Xylene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	sec-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	tert-Butyl alcohol	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-031-SD-01	N	tert-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Toluene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	trans-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Trichloroethene (TCE)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Vinyl chloride	0.00860	0.00430 U	0.00430 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-04-SDBG-01 (TB)/ SN3358-24	Methylene chloride	0.008300	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-029-SD-01 (N)/ SN3358-5		97.23	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-030-SD-01 (N)/ SN3358-11		96.23	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-031-SD-01 (N)/ SN3358-17		94.40	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	pH	0.100	5.40	5.40 J	-	ph units	H2
PR79-WT-030-SD-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-WT-031-SD-01	N	pH	0.100	6.40	6.40 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Chrysene	0.190	0.0430 J	0.0950 U		ug/l	L
PR79-WT-029-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-030-PW-01	N	Chrysene	0.190	0.0400 J	0.0960 U		ug/l	L
PR79-WT-030-PW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-031-PW-01	N	Chrysene	0.190	0.0350 J	0.0950 U		ug/l	L
PR79-WT-031-PW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PWBG-EB-01-01	EB	Chrysene	0.190	0.0430 J	0.0970 U		ug/l	L
PWBG-EB-01-01	EB	Pentachlorophenol	0.970	0.480 UL	0.480 UJ		ug/l	C

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	1,4-Dioxane (p-Dioxane)	0.0920	0.00290 JL	0.00290 J	-	mg/kg	C/TR
PR79-WT-030-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00370 JL	0.00370 J	-	mg/kg	C/TR
PR79-WT-031-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00310 JL	0.00310 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01-F	N	Potassium	1000	467 J	500 U		ug/l	L
PR79-WT-029-PW-01-F	N	Copper	25.0	1.70 J	10.0 U		ug/l	V
PR79-WT-029-PW-01-F	N	Zinc	20.0	7.00 J	10.0 U		ug/l	V
PR79-WT-030-PW-01-F	N	Potassium	1000	594 J	1000 U		ug/l	L
PR79-WT-030-PW-01-F	N	Copper	25.0	1.30 J	10.0 U		ug/l	V
PR79-WT-030-PW-01-F	N	Zinc	20.0	4.70 J	10.0 U		ug/l	V
PR79-WT-031-PW-01-F	N	Potassium	1000	932 J	1000 U		ug/l	L
PR79-WT-031-PW-01-F	N	Copper	25.0	0.960 J	10.0 U		ug/l	V
PR79-WT-031-PW-01-F	N	Zinc	20.0	2.30 J	10.0 U		ug/l	V
PWBG-EB-01-01-F	EB	Aluminum	300	32.0 J	100 U		ug/l	L
PWBG-EB-01-01-F	EB	Barium	5.00	0.680 J	3.00 U		ug/l	L
PWBG-EB-01-01-F	EB	Magnesium	100	18.0 J	80.0 U		ug/l	L
PWBG-EB-01-01-F	EB	Potassium	1000	72.0 J	500 U		ug/l	L
PWBG-EB-01-01-F	EB	Sodium	1000	456 J	500 U		ug/l	L

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-031-SD-01	N	Zinc	0.00962	0.00962	0.00962 U		umoles/g	L

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	Sodium	98.0	35.9 J	49.0 U		mg/kg	L
PR79-WT-030-SD-01	N	Sodium	120	24.2 J	63.0 U		mg/kg	L
PR79-WT-031-SD-01	N	Sodium	110	59.0 J	110 U		mg/kg	L

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Potassium	1000	300 J	500 U		ug/l	L
PR79-WT-029-PW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	V
PR79-WT-029-PW-01	N	Zinc	20.0	5.60 J	10.0 U		ug/l	V
PR79-WT-030-PW-01	N	Potassium	1000	749 J	1000 U		ug/l	L
PR79-WT-030-PW-01	N	Copper	25.0	1.50 J	10.0 U		ug/l	V
PR79-WT-030-PW-01	N	Zinc	20.0	4.40 J	10.0 U		ug/l	V
PR79-WT-031-PW-01	N	Copper	25.0	4.10 J	10.0 U		ug/l	V
PR79-WT-031-PW-01	N	Zinc	20.0	19.1 J	20.0 U		ug/l	V
PWBG-EB-01-01	EB	Aluminum	300	29.0 J	100 U		ug/l	L
PWBG-EB-01-01	EB	Barium	5.00	1.20 J	3.00 U		ug/l	L
PWBG-EB-01-01	EB	Magnesium	100	17.0 J	80.0 U		ug/l	L
PWBG-EB-01-01	EB	Potassium	1000	48.0 J	500 U		ug/l	L
PWBG-EB-01-01	EB	Sodium	1000	397 J	500 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01-F	N	Beryllium	1.00	0.210 J	1.00 U		ug/l	L
PR79-WT-029-PW-01-F	N	Lead	1.00	0.921 J	1.00 U		ug/l	L
PR79-WT-030-PW-01-F	N	Antimony	1.00	0.0620 J	0.500 U		ug/l	L
PR79-WT-030-PW-01-F	N	Beryllium	1.00	0.190 J	0.200 U		ug/l	L
PR79-WT-030-PW-01-F	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-031-PW-01-F	N	Antimony	1.00	0.0980 J	0.500 U		ug/l	L
PR79-WT-031-PW-01-F	N	Beryllium	1.00	0.140 J	0.200 U		ug/l	L
PR79-WT-031-PW-01-F	N	Lead	1.00	0.751 J	1.00 U		ug/l	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	Cadmium	0.0980	0.0680 J	0.0980 U		mg/kg	L
PR79-WT-030-SD-01	N	Cadmium	0.120	0.0440 J	0.120 U		mg/kg	L
PR79-WT-031-SD-01	N	Cadmium	0.110	0.0460 J	0.110 U		mg/kg	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-PW-01	N	Antimony	1.00	0.0980 J	0.500 U		ug/l	L
PR79-WT-029-PW-01	N	Beryllium	1.00	0.230 J	1.00 U		ug/l	L
PR79-WT-029-PW-01	N	Lead	1.00	0.500 J	0.500 U		ug/l	L
PR79-WT-030-PW-01	N	Beryllium	1.00	0.220 J	1.00 U		ug/l	L
PR79-WT-030-PW-01	N	Lead	1.00	0.970 J	1.00 U		ug/l	L
PR79-WT-031-PW-01	N	Antimony	1.00	0.0910 J	0.500 U		ug/l	L
PR79-WT-031-PW-01	N	Beryllium	1.00	0.869 J	1.00 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	Acetone	0.0200	0.0190 J	0.0190 J	+	mg/kg	I/TR

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-030-SD-01	N	1,1,1-Trichloroethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,1-Dichloroethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,1-Dichloroethene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2,3-Trichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2,4-Trichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2,4-Trimethylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,2-Dichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,3,5-Trimethylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	1,3-Dichlorobenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	2-Butanone (MEK)	0.0400	0.0220 J	0.0220 J		mg/kg	I/TR
PR79-WT-030-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0400	0.0200 U	0.0200 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Acetone	0.0400	0.100	0.100 J		mg/kg	I
PR79-WT-030-SD-01	N	Benzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Bromodichloromethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Bromomethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Carbon disulfide	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Chloroethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Chloroform	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Chloromethane	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	cis-1,2-Dichloroethene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Dibromochloromethane	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Ethylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Isopropylbenzene (Cumene)	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	m,p-Xylene	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Methylene chloride	0.0400	0.0200 U	0.0200 UJ		mg/kg	I
PR79-WT-030-SD-01	N	n-Butylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	n-Propylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	o-Xylene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	sec-Butylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	tert-Butyl alcohol	0.0400	0.0200 U	0.0200 UJ		mg/kg	I
PR79-WT-030-SD-01	N	tert-Butylbenzene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Toluene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	trans-1,2-Dichloroethene	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Trichloroethene (TCE)	0.00800	0.00400 U	0.00400 UJ		mg/kg	I
PR79-WT-030-SD-01	N	Vinyl chloride	0.0160	0.00800 U	0.00800 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,1,1-Trichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,1-Dichloroethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,1-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2,3-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-031-SD-01	N	1,2,4-Trichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2,4-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,2-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,3,5-Trimethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	1,3-Dichlorobenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	2-Butanone (MEK)	0.0220	0.0110 J	0.0110 J		mg/kg	I/TR
PR79-WT-031-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Acetone	0.0220	0.0380	0.0380 J		mg/kg	I
PR79-WT-031-SD-01	N	Benzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Bromodichloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Bromomethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Carbon disulfide	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Chloroethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Chloroform	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Chloromethane	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	cis-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Dibromochloromethane	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Ethylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Isopropylbenzene (Cumene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	m,p-Xylene	0.00860	0.00430 U	0.00430 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Methylene chloride	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-031-SD-01	N	n-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	n-Propylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	o-Xylene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	sec-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	tert-Butyl alcohol	0.0220	0.0110 U	0.0110 UJ		mg/kg	I
PR79-WT-031-SD-01	N	tert-Butylbenzene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Toluene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	trans-1,2-Dichloroethene	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Trichloroethene (TCE)	0.00430	0.00220 U	0.00220 UJ		mg/kg	I
PR79-WT-031-SD-01	N	Vinyl chloride	0.00860	0.00430 U	0.00430 UJ		mg/kg	I

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SD-01	N	pH	0.100	5.40	5.40 J	-	ph units	H2
PR79-WT-030-SD-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2
PR79-WT-031-SD-01	N	pH	0.100	6.40	6.40 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-029-PW-01-F	N	Copper	25.0	1.70 J	1.70 J	10.0 U	V
PR79-WT-029-PW-01-F	N	Potassium	1000	467 J	467 J	500 U	L
PR79-WT-029-PW-01-F	N	Zinc	20.0	7.00 J	7.00 J	10.0 U	V
PR79-WT-030-PW-01-F	N	Copper	25.0	1.30 J	1.30 J	10.0 U	V
PR79-WT-030-PW-01-F	N	Potassium	1000	594 J	594 J	1000 U	L
PR79-WT-030-PW-01-F	N	Zinc	20.0	4.70 J	4.70 J	10.0 U	V
PR79-WT-031-PW-01-F	N	Copper	25.0	0.960 J	0.960 J	10.0 U	V
PR79-WT-031-PW-01-F	N	Potassium	1000	932 J	932 J	1000 U	L
PR79-WT-031-PW-01-F	N	Zinc	20.0	2.30 J	2.30 J	10.0 U	V
PWBG-EB-01-01-F	EB	Aluminum	300	32.0 J	32.0 J	100 U	L
PWBG-EB-01-01-F	EB	Barium	5.00	0.680 J	0.680 J	3.00 U	L
PWBG-EB-01-01-F	EB	Magnesium	100	18.0 J	18.0 J	80.0 U	L
PWBG-EB-01-01-F	EB	Potassium	1000	72.0 J	72.0 J	500 U	L
PWBG-EB-01-01-F	EB	Sodium	1000	456 J	456 J	500 U	L

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-029-PW-01	N	Copper	25.0	1.10 J	1.10 J	10.0 U	V
PR79-WT-029-PW-01	N	Zinc	20.0	5.60 J	5.60 J	10.0 U	V
PR79-WT-030-PW-01	N	Copper	25.0	1.50 J	1.50 J	10.0 U	V
PR79-WT-030-PW-01	N	Zinc	20.0	4.40 J	4.40 J	10.0 U	V
PR79-WT-031-PW-01	N	Copper	25.0	4.10 J	4.10 J	10.0 U	V
PR79-WT-031-PW-01	N	Zinc	20.0	19.1 J	19.1 J	20.0 U	V

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-029-PW-01-F	N	Beryllium	1.00	0.210 J	0.210 J	1.00 U	L
PR79-WT-029-PW-01-F	N	Lead	1.00	0.921 J	0.921 J	1.00 U	L
PR79-WT-030-PW-01-F	N	Antimony	1.00	0.0620 J	0.0620 J	0.500 U	L
PR79-WT-030-PW-01-F	N	Beryllium	1.00	0.190 J	0.190 J	0.200 U	L
PR79-WT-030-PW-01-F	N	Lead	1.00	0.500 J	0.500 J	0.500 U	L
PR79-WT-031-PW-01-F	N	Antimony	1.00	0.0980 J	0.0980 J	0.500 U	L
PR79-WT-031-PW-01-F	N	Beryllium	1.00	0.140 J	0.140 J	0.200 U	L
PR79-WT-031-PW-01-F	N	Lead	1.00	0.751 J	0.751 J	1.00 U	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Assoc sample results >LOQ and >5X blank; no actions.
Were target analytes in the field blank less than MDL?		•		Assoc sample results >LOQ and >5X blank; no actions.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with the sample set.
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3358

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with the sample set.
Was the laboratory duplicate RPD within project acceptance limits?				None submitted with the sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		MB and LCS had high recovery of 2-Methylnaphthalene-d10 - no action required.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG277071-1, Chrysene 0.058J ug/L
Were target analytes in the field blank less than MDL?		•		PWBG-EB-01-01, Chrysene 0.043J ug/L
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		WG277068-2, 1,4-Dioxane 24.6% recovery QC window [30-150]. WG277071-2, Pentachlorophenol 26.0% recovery [36-141]. LCS only
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			batch QC
Were MS/MSD recoveries within project acceptance limits?			•	none submitted with the samples set.
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	none submitted with the samples set.
Were QAPP specified laboratory PQLs achieved?		•		lab LOQs meet QAPP PQLs (SW, PW, SD) but not all meet Project Action Limits (as noted in QAPP). 10 analytes in 2 SW3550 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: case narrative notes CCV analyzed outside 12h tune time. No qualifications would be required.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3358

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See ADR Report. Blank actions for filtered samples manually applied.
Were target analytes in the field blank less than MDL?		•		See ADR Report. Blank actions for filtered samples manually applied.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			batch QC
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with the sample set.
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping.-1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See ADR Report, Please note the filtered samples were not automatically assigned blank actions.
Were target analytes in the field blank less than MDL?		•		
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS ONLY
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	Batch QC
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with sample set.
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		SW6020A/SW3050B: 6 analytes in 2 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3358

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with the sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3358

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	EB not submitted for 7471B
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	None submitted with the sample set.
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with the sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3358

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see ADR submission report, PR79-WT-029-SD-01, DCA surrogate marked as out (highlighted) but it is w/i limits.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB-04-SDBG-01, Methylene Chloride 0.0083J mg/Kg
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			batch QC - 1 set and/or matrix only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?		•		9 analytes in 1 SW5035 sample did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV high Chloroethane and carbon disulfide - assoc results ND. CCV high BrMeth, acetone. Acetone result in PR79-WT-030-SD-01 may be biased high. Low for 2 IS for PR79-WT-031-SD-01, poss high bias acetone, 2-butanone. Low IS for PR79-WT-030-SD-01 poss high bias acetone, 2-butanone. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV issue associated with initial analyzed 5/5/2020, GCMS-T
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?		•		All samples outside the 24 hour HT
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the samples set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			the HT nonconformances were not mentioned in narrative.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?		•		1.2, 0.7C. One of the three vials for SD-030 (SN3358-11) was not threaded properly and took on water during shipping. -1,-2,-7,-8,-13,14 as well as the EBs collected 4/30, cancelled
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with the sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with the sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with the sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with the sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3397
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-103-AS-01	SN3397-1	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-103-AS-01	SN3397-3	Solid	Field Sample/N			X					
PR79-SB-103-BS-01	SN3397-2	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-103-BS-01	SN3397-4	Solid	Field Sample/N			X					

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3397. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 9 results (7.20%) out of the 125 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 08, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277157-2 (BS)/ WG277157-2	1,4-Dioxane (p-Dioxane)	27.89	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 UL	0.0550 UJ		mg/kg	C
PR79-SB-103-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00270 JL	0.00270 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Silver	0.04800	< 0.027	< 1	mg/kg	U/None	L	
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Aluminum	0.8500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Sodium	5.500	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-AS-01	N	Silver	0.990	0.462 J	0.990 U		mg/kg	L
PR79-SB-103-AS-01	N	Sodium	99.0	57.7 J	99.0 U		mg/kg	L
PR79-SB-103-BS-01	N	Silver	0.970	0.607 J	0.970 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE11IMS1 (LB)/ PBSNE11IMS1	Beryllium	0.009800	< 0.0041	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-103-BS-01 (N)/ SN3397-2	Dibromofluoromethane	124.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-BS-01	N	Acetone	0.0200	0.00490 J	0.00490 J	+	mg/kg	I/TR
PR79-SB-103-BS-01	N	Methylene chloride	0.0200	0.00890 J	0.00890 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-103-BS-01 (STD)	1,2-Dichloroethane-d4	137.0	71 - 136	10 - 136	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-103-AS-01 (N)/ SN3397-1		43.08	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-AS-01	N	pH	0.100	7.30	7.30 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM	**Extraction Method: SW3550**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 UL	0.0550 UJ		mg/kg	C
PR79-SB-103-BS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.00270 JL	0.00270 J	-	mg/kg	C/TR

Test Method: SW6010C	**Extraction Method: SW3050B**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-AS-01	N	Silver	0.990	0.462 J	0.990 U		mg/kg	L
PR79-SB-103-AS-01	N	Sodium	99.0	57.7 J	99.0 U		mg/kg	L
PR79-SB-103-BS-01	N	Silver	0.970	0.607 J	0.970 U		mg/kg	L

Test Method: SW8260C	**Extraction Method: SW5035**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-BS-01	N	Acetone	0.0200	0.00490 J	0.00490 J	+	mg/kg	I/TR
PR79-SB-103-BS-01	N	Methylene chloride	0.0200	0.00890 J	0.00890 J	+	mg/kg	I/TR

Test Method: SW9045D	**Extraction Method: METHOD**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-103-AS-01	N	pH	0.100	7.30	7.30 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Results with Modified Qualifiers

No qualifiers associated with this sample delivery group were modified manually.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		Criteria met except for 10X dilution analysis of PR79-SB-103-AS-01; no quals due to dilution.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB in this set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		See outlier report; 1,4-dioxane below criteria
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS in this set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report. BNASIM/SW3550: 2 analytes in 1 sample did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not reviewed as part of 2A validation: CCV high for chrysene - results in PR79-SB-103-AS-01, PR79-SB-103-BS-01 may be biased high. CCV high for 14-diox and chrysene - 14-diox in PR79-SB-103-BS-01 may be biased high. CCV outside 12h tune time. CCV outside criteria for pentachlorophenol not assoc with reported results. Nonconformances are not expected to impact data quality; qualifiers not applied. Note 1,4-dioxane low %R not noted in case narrative.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			SPLP analytes as requested
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier: Al, Ag, Na in method blank
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: PQL std high for Lead - assoc result for SPLP Pb in PR79-SB-103-AS-01 may be biased high. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report; Be detected. No actions required.
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report. SW7471B/METHOD: 1 analyte in 1 sample did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		PR79-SB-103-BS-01 two surrogate %Rs above criteria; see outlier report. Added outlier for DCA.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		see outlier report; sample analyzed >24h
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3397

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3452

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3452
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-005-PW-01	SN3452-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-005-PW-01-F	SN3452-4		Field Sample/N					X		X		X				
PR79-WT-006-PW-01	SN3452-9		Field Sample/N	X		X	X		X		X			X		
PR79-WT-006-PW-01-F	SN3452-10		Field Sample/N					X		X		X				
PR79-WT-023-PW-01	SN3452-15		Field Sample/N	X		X	X		X		X			X		
PR79-WT-023-PW-01-F	SN3452-16		Field Sample/N					X		X		X				
PR79-WT-005-SD-01	SN3452-5	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-005-SD-01	SN3452-6	Solid	Field Sample/N		X		X									
PR79-WT-006-SD-01	SN3452-11	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-006-SD-01	SN3452-12	Solid	Field Sample/N		X		X									
PR79-WT-023-SD-01	SN3452-17	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-023-SD-01	SN3452-18	Solid	Field Sample/N		X		X									
TB-01-SD-01	SN3452-19	Solid	Trip Blank/TB											X		
PR79-WT-005-SW-01	SN3452-1	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-005-SW-01-F	SN3452-2	Water	Field Sample/N					X		X		X				
PR79-WT-006-SW-01	SN3452-7	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-006-SW-01-F	SN3452-8	Water	Field Sample/N					X		X		X				
PR79-WT-023-SW-01	SN3452-13	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-023-SW-01-F	SN3452-14	Water	Field Sample/N					X		X		X				
TB-01-SW-01	SN3452-20	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-005-PW-01	SN3452-3		Field Sample/N	X
PR79-WT-005-PW-01-F	SN3452-4		Field Sample/N	
PR79-WT-006-PW-01	SN3452-9		Field Sample/N	X
PR79-WT-006-PW-01-F	SN3452-10		Field Sample/N	
PR79-WT-023-PW-01	SN3452-15		Field Sample/N	X
PR79-WT-023-PW-01-F	SN3452-16		Field Sample/N	
PR79-WT-005-SD-01	SN3452-5	Solid	Field Sample/N	
PR79-WT-005-SD-01	SN3452-6	Solid	Field Sample/N	
PR79-WT-006-SD-01	SN3452-11	Solid	Field Sample/N	
PR79-WT-006-SD-01	SN3452-12	Solid	Field Sample/N	
PR79-WT-023-SD-01	SN3452-17	Solid	Field Sample/N	
PR79-WT-023-SD-01	SN3452-18	Solid	Field Sample/N	
TB-01-SD-01	SN3452-19	Solid	Trip Blank/TB	
PR79-WT-005-SW-01	SN3452-1	Water	Field Sample/N	X
PR79-WT-005-SW-01-F	SN3452-2	Water	Field Sample/N	
PR79-WT-006-SW-01	SN3452-7	Water	Field Sample/N	X
PR79-WT-006-SW-01-F	SN3452-8	Water	Field Sample/N	
PR79-WT-023-SW-01	SN3452-13	Water	Field Sample/N	X
PR79-WT-023-SW-01-F	SN3452-14	Water	Field Sample/N	
TB-01-SW-01	SN3452-20	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3452. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Extracted Internal Standard

Lab Blank

LCS Recovery

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 90 results (9.12%) out of the 987 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	soil samples were frozen prior to 48 hours - HT confirmed - ok.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

July 20, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method AVS, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (MS)/ WG277813-3	Sulfide	74.97	75 - 125	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277379-1 (LB)/ WG277379-1	2-Methylnaphthalene	0.4600	< 0.077	< 0.2	ug/l	U/None	L	
WG277379-1 (LB)/ WG277379-1	Naphthalene	0.6300	< 0.064	< 0.2	ug/l	U/None	L	Blank is over 3X RL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277241-2 (BS)/ WG277241-2	Benzo (b)fluoranthene	41.23	53 - 128	10 - 128	percent	J/UJ	C	
WG277241-2 (BS)/ WG277241-2	Benzo (a)anthracene	49.63	54 - 122	10 - 122	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	Benzo(a)anthracene	0.0220	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-WT-005-SD-01	N	Benzo(b)fluoranthene	0.0220	0.00330 JL	0.00330 J	-	mg/kg	C/TR
PR79-WT-006-SD-01	N	Benzo(a)anthracene	0.0210	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-WT-006-SD-01	N	Benzo(b)fluoranthene	0.0210	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-WT-023-SD-01	N	Benzo(a)anthracene	0.0300	0.00360 JL	0.00360 J	-	mg/kg	C/TR
PR79-WT-023-SD-01	N	Benzo(b)fluoranthene	0.0300	0.00590 JL	0.00590 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-PW-01 (MS)/ WG277379-5	Indeno(1,2,3-c,d)pyrene	33.33	48 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-023-PW-01 (MS)/ WG277379-5	Benzo (g,h,i)perylene	35.45	44 - 128	10 - 128	percent	J/UJ	M	
PR79-WT-023-PW-01 (MS)/ WG277379-5	Benzo (b)fluoranthene	41.27	53 - 126	10 - 126	percent	J/UJ	M	
PR79-WT-023-PW-01 (MS)/ WG277379-5	Dibenz (a,h)anthracene	42.33	44 - 131	10 - 131	percent	J/UJ	M	
PR79-WT-023-PW-01 (MS)/ WG277379-5	Benzo(a)pyrene	46.56	53 - 120	10 - 120	percent	J/UJ	M	
PR79-WT-023-PW-01 (SD)/ WG277379-6	1,4-Dioxane (p-Dioxane)	94.74	10 - 93	10 - 93	percent	J/None	M	
PR79-WT-023-SW-01 (SD)/ WG277379-4	Anthracene	52.91	53 - 119	10 - 119	percent	J/UJ	M	
PR79-WT-023-SW-01 (SD)/ WG277379-4	1,4-Dioxane (p-Dioxane)	95.24	10 - 93	10 - 93	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-PW-01	N	Benzo(a)pyrene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Benzo(b)fluoranthene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0950 UM	0.0950 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (MS)/ WG277241-3	1,4-Dioxane (p-Dioxane)	23.76	30 - 150	10 - 150	percent	J/UJ	M	
PR79-WT-023-SD-01 (MS)/ WG277241-3	Indeno(1,2,3-c,d)pyrene	47.92	49 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-023-SD-01 (SD)/ WG277241-4	1,4-Dioxane (p-Dioxane)	22.55	30 - 150	10 - 150	percent	J/UJ	M	
PR79-WT-023-SD-01 (SD)/ WG277241-4	Indeno(1,2,3-c,d)pyrene	47.45	49 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-023-SD-01 (SD)/ WG277241-4	Chrysene	54.41	57 - 118	10 - 118	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	1,4-Dioxane (p-Dioxane)	0.150	0.0750 UMM	0.0750 UJ		mg/kg	M
PR79-WT-023-SD-01	N	Chrysene	0.0300	0.00550 JM	0.00550 J	-	mg/kg	M/TR
PR79-WT-023-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0300	0.00460 JMM	0.00460 J	-	mg/kg	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-PW-01 (SD)/ WG277379-6	Benzo(a)pyrene	0.3200	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-023-PW-01 (SD)/ WG277379-6	Indeno(1,2,3-c,d)pyrene	0.4700	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-023-PW-01 (SD)/ WG277379-6	Benzo (b)fluoranthene	0.5200	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-023-PW-01 (SD)/ WG277379-6	Benzo (g,h,i)perylene	0.5300	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-023-PW-01 (SD)/ WG277379-6	Dibenz (a,h)anthracene	0.6000	< 0.19	< 0.19	ug/l	J/None	D	
PR79-WT-023-PW-01 (SD)/ WG277379-6	Pentachlorophenol	1.900	< 0.94	< 0.94	ug/l	J/None	D	
PR79-WT-023-PW-01 (SD)/ WG277379-6	Benzo (k)fluoranthene	32.26	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07ICW2 (LB)	Iron	20.00	< 5.4	< 100	ug/l	None/U	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-PW-01-F	N	Iron	100	15.0 J	80.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Chromium	0.06500	< 0.026	< 1	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Magnesium	1.400	< 0.68	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Iron	1.800	< 1.4	< 10	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Potassium	14.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE14ICS1 (LB)/ PBSNE14ICS1	Sodium	3.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	Sodium	74.0	34.3 J	37.0 U		mg/kg	L
PR79-WT-006-SD-01	N	Sodium	72.0	25.2 J	36.0 U		mg/kg	L
PR79-WT-023-SD-01	N	Sodium	140	73.2 J	140 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)/ SN3452-018P	Lead	-51.91	81 - 112	30 - 125	percent	J/X	M	
PR79-WT-023-SD-01 (SD)/ SN3452-018P	Zinc	65.87	82 - 113	30 - 125	percent	J/UJ	M	
PR79-WT-023-SD-01 (MS)/ SN3452-018S	Lead	-63.46	81 - 112	30 - 125	percent	J/X	M	
PR79-WT-023-SD-01 (MS)/ SN3452-018S	Zinc	66.40	82 - 113	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Lead	0.000820	0.0419 N	0.0419 J	-	umoles/g	M
PR79-WT-023-SD-01	N	Zinc	0.0100	0.101 N	0.101 J	-	umoles/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Magnesium	138.5	78 - 115	30 - 125	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Calcium	155.6	81 - 116	30 - 125	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Aluminum	355.9	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Iron	571.4	81 - 118	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-WT-023-SD-01 (MS)/ SN3452-017S	Iron	-28.78	81 - 118	30 - 125	percent	J/X	M	Spike amount Insignificant
PR79-WT-023-SD-01 (MS)/ SN3452-017S	Calcium	125.3	81 - 116	30 - 125	percent	J/None	M	
PR79-WT-023-SD-01 (MS)/ SN3452-017S	Aluminum	129.5	74 - 119	30 - 125	percent	J/None	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Magnesium	14.0	498 N*	498 J	+	mg/kg	M/D
PR79-WT-023-SD-01	N	Calcium	14.0	824 N	824 J	+	mg/kg	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)/ SN3452-018P	Copper	21.46	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Copper	0.0130	0.00461 J*	0.00461 J		umoles/ g	D/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Magnesium	27.03	< 20	< 20	rpd	J/UJ	D	
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Iron	31.34	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Magnesium	14.0	498 N*	498 J	+	mg/kg	M/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07ICW2 (LB)/ PBWNE07ICW2	Iron	20.00	< 5.4	< 100	ug/l	U/None	L	
PBWNE07ICW2 (LB)/ PBWNE07ICW2	Magnesium	9.900	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Total, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-PW-01 (SD)/ SN3452-015P	Sodium	121.3	87 - 115	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-WT-023-PW-01 (MS)/ SN3452-015S	Calcium	132.0	87 - 113	30 - 125	percent	J/None	M	Spike amount Insignificant
PR79-WT-023-PW-01 (MS)/ SN3452-015S	Sodium	142.7	87 - 115	30 - 125	percent	J/None	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07IMW2 (LB)	Beryllium	0.05400	< 0.034	< 1	ug/l	None/U	L	
PBWNE07IMW2 (LB)	Lead	0.07900	< 0.074	< 1	ug/l	None/U	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-PW-01-F	N	Beryllium	1.00	0.0550 J	0.200 U		ug/l	L
PR79-WT-005-PW-01-F	N	Lead	1.00	0.270 J	0.500 U		ug/l	L
PR79-WT-005-SW-01-F	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-005-SW-01-F	N	Lead	1.00	0.240 J	0.500 U		ug/l	L
PR79-WT-006-PW-01-F	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L
PR79-WT-006-SW-01-F	N	Beryllium	1.00	0.0410 J	0.200 U		ug/l	L
PR79-WT-006-SW-01-F	N	Lead	1.00	0.200 J	0.500 U		ug/l	L
PR79-WT-023-PW-01-F	N	Beryllium	1.00	0.140 J	0.200 U		ug/l	L
PR79-WT-023-SW-01-F	N	Beryllium	1.00	0.170 J	0.200 U		ug/l	L
PR79-WT-023-SW-01-F	N	Lead	1.00	0.560 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)/ SN3452-017P	Antimony	64.71	72 - 124	30 - 125	percent	J/UJ	M	
PR79-WT-023-SD-01 (MS)/ SN3452-017S	Antimony	66.83	72 - 124	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Antimony	0.140	0.0510 JN	0.0510 J	-	mg/kg	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE07IMW2 (LB)/ PBWNE07IMW2	Beryllium	0.05400	< 0.034	< 1	ug/l	U/None	L	
PBWNE07IMW2 (LB)/ PBWNE07IMW2	Lead	0.07900	< 0.074	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-PW-01	N	Beryllium	1.00	0.0950 J	0.200 U		ug/l	L
PR79-WT-005-PW-01	N	Lead	1.00	0.690 J	1.00 U		ug/l	L
PR79-WT-005-SW-01	N	Beryllium	1.00	0.210 J	1.00 U		ug/l	L
PR79-WT-006-PW-01	N	Beryllium	1.00	0.0750 J	0.200 U		ug/l	L
PR79-WT-006-SW-01	N	Beryllium	1.00	0.0880 J	0.200 U		ug/l	L
PR79-WT-006-SW-01	N	Lead	1.00	0.260 J	0.500 U		ug/l	L
PR79-WT-023-PW-01	N	Beryllium	1.00	0.150 J	0.200 U		ug/l	L
PR79-WT-023-PW-01	N	Lead	1.00	0.420 J	0.500 U		ug/l	L
PR79-WT-023-SW-01	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L
PR79-WT-023-SW-01	N	Lead	1.00	0.540 J	1.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277634-1 (BS)/ WG277634-1	Bromomethane	160.0	53 - 143	10 - 143	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-PW-01 (MS)/ WG277635-8	Chloroethane	142.2	60 - 138	10 - 138	percent	J/None	M	
PR79-WT-023-PW-01 (MS)/ WG277635-8	Bromomethane	145.2	53 - 141	10 - 141	percent	J/None	M	
PR79-WT-023-PW-01 (SD)/ WG277635-9	m,p-Xylene	122.0	80 - 121	10 - 121	percent	J/None	M	
PR79-WT-023-PW-01 (SD)/ WG277635-9	Chloroethane	141.0	60 - 138	10 - 138	percent	J/None	M	
PR79-WT-023-PW-01 (SD)/ WG277635-9	Bromomethane	141.2	53 - 141	10 - 141	percent	J/None	M	
PR79-WT-023-SW-01 (MS)/ WG277635-6	Chloroethane	162.6	60 - 138	10 - 138	percent	J/None	M	
PR79-WT-023-SW-01 (MS)/ WG277635-6	tert-Butyl alcohol	63.60	68 - 129	10 - 129	percent	J/UJ	M	
PR79-WT-023-SW-01 (SD)/ WG277635-7	Bromomethane	143.8	53 - 141	10 - 141	percent	J/None	M	
PR79-WT-023-SW-01 (SD)/ WG277635-7	Chloroethane	149.0	60 - 138	10 - 138	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SW-01	N	tert-Butyl alcohol	5.00	2.50 UM	2.50 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (MS)/ WG277634-6	tert-Butyl alcohol	136.1	68 - 133	10 - 133	percent	J/None	M	
PR79-WT-023-SD-01 (MS)/ WG277634-6	Methylene chloride	136.1	70 - 128	10 - 128	percent	J/None	M	
PR79-WT-023-SD-01 (MS)/ WG277634-6	Bromomethane	180.6	53 - 143	10 - 143	percent	J/None	M	
PR79-WT-023-SD-01 (MS)/ WG277634-6	1,2,3-Trichlorobenzene	45.83	66 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-023-SD-01 (MS)/ WG277634-6	1,2,4-Trichlorobenzene	50.00	67 - 129	10 - 129	percent	J/UJ	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	trans-1,2-Dichloroethene	126.0	74 - 125	10 - 125	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	tert-Butylbenzene	127.4	73 - 125	10 - 125	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	n-Propylbenzene	128.8	73 - 125	10 - 125	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	1,1,1-Trichloroethane	130.1	73 - 130	10 - 130	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	tert-Butyl alcohol	133.3	68 - 133	10 - 133	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	1,1-Dichloroethene	135.6	70 - 131	10 - 131	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	Vinyl chloride	137.0	56 - 135	10 - 135	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	Isopropylbenzene (Cumene)	137.0	68 - 134	10 - 134	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	Bromomethane	164.4	53 - 143	10 - 143	percent	J/None	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	Acetone	27.40	36 - 164	10 - 164	percent	J/UJ	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	1,2,3-Trichlorobenzene	45.21	66 - 130	10 - 130	percent	J/UJ	M	
PR79-WT-023-SD-01 (SD)/ WG277634-7	1,2,4-Trichlorobenzene	52.05	67 - 129	10 - 129	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	1,2,4-Trichlorobenzene	0.00700	0.00350 UMM	0.00350 UJ		mg/kg	M/I
PR79-WT-023-SD-01	N	Methylene chloride	0.0350	0.0120 JM	0.0120 J		mg/kg	M/I/TR
PR79-WT-023-SD-01	N	1,2,3-Trichlorobenzene	0.00700	0.00350 UMM	0.00350 UJ		mg/kg	M/I

Qualified Results associated with the MS Recovery for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Acetone	0.0350	0.100 M	0.100 J		mg/kg	M/I/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)/ WG277634-7	tert-Butylbenzene	21.43	< 20	< 20	rpd	J/None	D	
PR79-WT-023-SD-01 (SD)/ WG277634-7	Isopropylbenzene (Cumene)	22.22	< 20	< 20	rpd	J/None	D	
PR79-WT-023-SD-01 (SD)/ WG277634-7	n-Propylbenzene	22.49	< 20	< 20	rpd	J/None	D	
PR79-WT-023-SD-01 (SD)/ WG277634-7	sec-Butylbenzene	23.08	< 20	< 20	rpd	J/None	D	
PR79-WT-023-SD-01 (SD)/ WG277634-7	p-Cymene (p-Isopropyltoluene)	23.08	< 20	< 20	rpd	J/None	D	
PR79-WT-023-SD-01 (SD)/ WG277634-7	n-Butylbenzene	24.46	< 20	< 20	rpd	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (SD)	4-Methyl-2-pentanone (MIBK)	27.00	< 20	< 20	percent	J/None	D	
PR79-WT-023-SD-01 (SD)	Acetone	45.00	< 20	< 20	percent	J/None	D	
PR79-WT-023-SD-01 (SD)	2-Butanone (MEK)	48.00	< 20	< 20	percent	J/None	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS RPD for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	2-Butanone (MEK)	0.0350	0.0150 J	0.0150 J		mg/kg	I/TR/D
PR79-WT-023-SD-01	N	Acetone	0.0350	0.100 M	0.100 J		mg/kg	M/I/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-005-SD-01 (N)/ SN3452-5	Dibromofluoromethane	121.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-006-SD-01 (N)/ SN3452-11	Dibromofluoromethane	124.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-023-SD-01 (N)/ SN3452-17	Dibromofluoromethane	128.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-023-SD-01 (N)/ SN3452-17	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	75.60	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	Acetone	0.0250	0.0240 J	0.0240 J	+	mg/kg	I/TR
PR79-WT-006-SD-01	N	Acetone	0.0280	0.0180 J	0.0180 J	+	mg/kg	I/TR
PR79-WT-006-SD-01	N	Methylene chloride	0.0280	0.0160 J	0.0160 J	+	mg/kg	I/TR
PR79-WT-023-SD-01	N	1,1,1-Trichloroethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,1-Dichloroethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,1-Dichloroethene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,2,3-Trichlorobenzene	0.00700	0.00350 UMM	0.00350 UJ		mg/kg	M/I
PR79-WT-023-SD-01	N	1,2,4-Trichlorobenzene	0.00700	0.00350 UMM	0.00350 UJ		mg/kg	M/I
PR79-WT-023-SD-01	N	1,2,4-Trimethylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,2-Dichlorobenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,3,5-Trimethylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,3-Dichlorobenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	2-Butanone (MEK)	0.0350	0.0150 J	0.0150 J		mg/kg	I/TR/D
PR79-WT-023-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0350	0.0180 U	0.0180 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Acetone	0.0350	0.100 M	0.100 J		mg/kg	M/I/D
PR79-WT-023-SD-01	N	Benzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Bromodichloromethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Bromomethane	0.0140	0.00700 UMM	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Carbon disulfide	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Chloroethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Chloroform	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Chloromethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	cis-1,2-Dichloroethene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Dibromochloromethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Ethylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Isopropylbenzene (Cumene)	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	m,p-Xylene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Methylene chloride	0.0350	0.0120 JM	0.0120 J		mg/kg	M/I/TR
PR79-WT-023-SD-01	N	n-Butylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	n-Propylbenzene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	o-Xylene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	sec-Butylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	tert-Butyl alcohol	0.0350	0.0180 UM	0.0180 UJ		mg/kg	I
PR79-WT-023-SD-01	N	tert-Butylbenzene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Toluene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	trans-1,2-Dichloroethene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Trichloroethene (TCE)	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Vinyl chloride	0.0140	0.00700 UM	0.00700 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-006-SD-01 (STD)	1,2-Dichloroethane-d4	138.0	71 - 136	10 - 136	percent	J/None	I	
PR79-WT-023-SD-01 (STD)	1,2-Dichloroethane-d4	150.0	71 - 136	10 - 136	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-005-SD-01 (N)/ SN3452-5		42.85	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-006-SD-01 (N)/ SN3452-11		43.85	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-023-SD-01 (N)/ SN3452-17		46.10	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	pH	0.100	7.10	7.10 J	-	ph units	H2
PR79-WT-006-SD-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2
PR79-WT-023-SD-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-SD-01 (MS)/ WG277967-3	Total Organic Carbon	136.3	80 - 120	30 - 120	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Total Organic Carbon	1400	22000	22000 J	+	ug/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-023-PW-01 (MS)/ WG277364-8	Vinyl chloride	136.0	70 - 130	10 - 130	percent	J/None	M	
PR79-WT-023-SW-01 (MS)/ WG277364-6	Vinyl chloride	134.0	70 - 130	10 - 130	percent	J/None	M	
PR79-WT-023-SW-01 (SD)/ WG277364-7	Vinyl chloride	138.0	70 - 130	10 - 130	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-SW-01 (TB)/ SN3452-20	Benzene	0.01100	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-PW-01	N	Benzo(a)pyrene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Benzo(b)fluoranthene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 UM	0.0950 UJ		ug/l	M
PR79-WT-023-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0950 UM	0.0950 UJ		ug/l	M

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	Benzo(a)anthracene	0.0220	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-WT-005-SD-01	N	Benzo(b)fluoranthene	0.0220	0.00330 JL	0.00330 J	-	mg/kg	C/TR
PR79-WT-006-SD-01	N	Benzo(a)anthracene	0.0210	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-WT-006-SD-01	N	Benzo(b)fluoranthene	0.0210	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-WT-023-SD-01	N	Benzo(a)anthracene	0.0300	0.00360 JL	0.00360 J	-	mg/kg	C/TR
PR79-WT-023-SD-01	N	Benzo(b)fluoranthene	0.0300	0.00590 JL	0.00590 J	-	mg/kg	C/TR
PR79-WT-023-SD-01	N	1,4-Dioxane (p-Dioxane)	0.150	0.0750 UMM	0.0750 UJ		mg/kg	M
PR79-WT-023-SD-01	N	Chrysene	0.0300	0.00550 JM	0.00550 J	-	mg/kg	M/TR
PR79-WT-023-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0300	0.00460 JMM	0.00460 J	-	mg/kg	M/TR

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-PW-01-F	N	Iron	100	15.0 J	80.0 U		ug/l	L

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Copper	0.0130	0.00461 J*	0.00461 J		umoles/g	D/TR
PR79-WT-023-SD-01	N	Lead	0.000820	0.0419 N	0.0419 J	-	umoles/g	M
PR79-WT-023-SD-01	N	Zinc	0.0100	0.101 N	0.101 J	-	umoles/g	M

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	Sodium	74.0	34.3 J	37.0 U		mg/kg	L
PR79-WT-006-SD-01	N	Sodium	72.0	25.2 J	36.0 U		mg/kg	L
PR79-WT-023-SD-01	N	Sodium	140	73.2 J	140 U		mg/kg	L
PR79-WT-023-SD-01	N	Magnesium	14.0	498 N*	498 J	+	mg/kg	M/D
PR79-WT-023-SD-01	N	Calcium	14.0	824 N	824 J	+	mg/kg	M

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-PW-01-F	N	Beryllium	1.00	0.0550 J	0.200 U		ug/l	L
PR79-WT-005-PW-01-F	N	Lead	1.00	0.270 J	0.500 U		ug/l	L
PR79-WT-005-SW-01-F	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A	Extraction Method: Dissolved							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SW-01-F	N	Lead	1.00	0.240 J	0.500 U		ug/l	L
PR79-WT-006-PW-01-F	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L
PR79-WT-006-SW-01-F	N	Beryllium	1.00	0.0410 J	0.200 U		ug/l	L
PR79-WT-006-SW-01-F	N	Lead	1.00	0.200 J	0.500 U		ug/l	L
PR79-WT-023-PW-01-F	N	Beryllium	1.00	0.140 J	0.200 U		ug/l	L
PR79-WT-023-SW-01-F	N	Beryllium	1.00	0.170 J	0.200 U		ug/l	L
PR79-WT-023-SW-01-F	N	Lead	1.00	0.560 J	1.00 U		ug/l	L

Test Method: SW6020A	Extraction Method: SW3050B							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Antimony	0.140	0.0510 JN	0.0510 J	-	mg/kg	M/TR

Test Method: SW6020A	Extraction Method: Total							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-PW-01	N	Beryllium	1.00	0.0950 J	0.200 U		ug/l	L
PR79-WT-005-PW-01	N	Lead	1.00	0.690 J	1.00 U		ug/l	L
PR79-WT-005-SW-01	N	Beryllium	1.00	0.210 J	1.00 U		ug/l	L
PR79-WT-006-PW-01	N	Beryllium	1.00	0.0750 J	0.200 U		ug/l	L
PR79-WT-006-SW-01	N	Beryllium	1.00	0.0880 J	0.200 U		ug/l	L
PR79-WT-006-SW-01	N	Lead	1.00	0.260 J	0.500 U		ug/l	L
PR79-WT-023-PW-01	N	Beryllium	1.00	0.150 J	0.200 U		ug/l	L
PR79-WT-023-PW-01	N	Lead	1.00	0.420 J	0.500 U		ug/l	L
PR79-WT-023-SW-01	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L
PR79-WT-023-SW-01	N	Lead	1.00	0.540 J	1.00 U		ug/l	L

Test Method: SW8260C	Extraction Method: SW5030							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SW-01	N	tert-Butyl alcohol	5.00	2.50 UM	2.50 UJ		ug/l	M

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	Acetone	0.0250	0.0240 J	0.0240 J	+	mg/kg	I/TR
PR79-WT-006-SD-01	N	Acetone	0.0280	0.0180 J	0.0180 J	+	mg/kg	I/TR
PR79-WT-006-SD-01	N	Methylene chloride	0.0280	0.0160 J	0.0160 J	+	mg/kg	I/TR
PR79-WT-023-SD-01	N	1,1,1-Trichloroethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,1-Dichloroethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,1-Dichloroethene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,2,3-Trichlorobenzene	0.00700	0.00350 UMM	0.00350 UJ		mg/kg	M/I
PR79-WT-023-SD-01	N	1,2,4-Trichlorobenzene	0.00700	0.00350 UMM	0.00350 UJ		mg/kg	M/I
PR79-WT-023-SD-01	N	1,2,4-Trimethylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,2-Dichlorobenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,3,5-Trimethylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	1,3-Dichlorobenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	2-Butanone (MEK)	0.0350	0.0150 J	0.0150 J		mg/kg	I/TR/D
PR79-WT-023-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0350	0.0180 U	0.0180 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Acetone	0.0350	0.100 M	0.100 J		mg/kg	M/I/D
PR79-WT-023-SD-01	N	Benzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Bromodichloromethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Bromomethane	0.0140	0.00700 UMM	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Carbon disulfide	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Chloroethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Chloroform	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Chloromethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	cis-1,2-Dichloroethene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Dibromochloromethane	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Ethylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Isopropylbenzene (Cumene)	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	m,p-Xylene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Methylene chloride	0.0350	0.0120 JM	0.0120 J		mg/kg	M/I/TR
PR79-WT-023-SD-01	N	n-Butylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	n-Propylbenzene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	o-Xylene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	sec-Butylbenzene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	tert-Butyl alcohol	0.0350	0.0180 UM	0.0180 UJ		mg/kg	I
PR79-WT-023-SD-01	N	tert-Butylbenzene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Toluene	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	trans-1,2-Dichloroethene	0.00700	0.00350 UM	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Trichloroethene (TCE)	0.00700	0.00350 U	0.00350 UJ		mg/kg	I
PR79-WT-023-SD-01	N	Vinyl chloride	0.0140	0.00700 UM	0.00700 UJ		mg/kg	I

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-005-SD-01	N	pH	0.100	7.10	7.10 J	-	ph units	H2
PR79-WT-006-SD-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2
PR79-WT-023-SD-01	N	pH	0.100	6.50	6.50 J	-	ph units	H2

Test Method: SW9060A Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-023-SD-01	N	Total Organic Carbon	1400	22000	22000 J	+	ug/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-005-SD-01	N	Sulfide	0.120	0.0920 U	0.0920 UJ	0.0920 U	
PR79-WT-006-SD-01	N	Sulfide	0.120	0.0890 U	0.0890 UJ	0.0890 U	
PR79-WT-023-SD-01	N	Sulfide	0.160	0.120 U	0.120 UJ	0.120 U	

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-023-SW-01	N	Anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-005-SD-01	N	Benzo(a)anthracene	0.0220	0.0110 UL	0.0110 X	0.0110 UJ	C
PR79-WT-006-SD-01	N	Benzo(a)anthracene	0.0210	0.0110 UL	0.0110 X	0.0110 UJ	C
PR79-WT-006-SD-01	N	Benzo(b)fluoranthene	0.0210	0.0110 UL	0.0110 X	0.0110 UJ	C

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-023-PW-01-F	N	Iron	100	15.0 J	15.0 J	80.0 U	L

Modified Qualifiers for test method SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-023-SD-01	N	Iron	14.0	2300 N*	2300 J	2300	

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-005-PW-01-F	N	Beryllium	1.00	0.0550 J	0.0550 J	0.200 U	L
PR79-WT-005-PW-01-F	N	Lead	1.00	0.270 J	0.270 J	0.500 U	L
PR79-WT-005-SW-01-F	N	Beryllium	1.00	0.100 J	0.100 J	0.200 U	L
PR79-WT-005-SW-01-F	N	Lead	1.00	0.240 J	0.240 J	0.500 U	L
PR79-WT-006-PW-01-F	N	Beryllium	1.00	0.0620 J	0.0620 J	0.200 U	L
PR79-WT-006-SW-01-F	N	Beryllium	1.00	0.0410 J	0.0410 J	0.200 U	L
PR79-WT-006-SW-01-F	N	Lead	1.00	0.200 J	0.200 J	0.500 U	L
PR79-WT-023-PW-01-F	N	Beryllium	1.00	0.140 J	0.140 J	0.200 U	L
PR79-WT-023-SW-01-F	N	Beryllium	1.00	0.170 J	0.170 J	0.200 U	L
PR79-WT-023-SW-01-F	N	Lead	1.00	0.560 J	0.560 J	1.00 U	L

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-023-SD-01	N	2-Butanone (MEK)	0.0350	0.0150 J	0.0150 J	0.0150 J	I/TR/D
PR79-WT-023-SD-01	N	Acetone	0.0350	0.100 M	0.100 J	0.100 J	M/I/D

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D	MS RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			SN3452-18. MS only ADR qualified all results J. Qualifiers removed 74.97 would round to 75 which would be w/i QC window [75-125].
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See ADR report. Surrogates outside QC window for MB, MS/MSD and MS/MSD - no action - all QC samples.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		MB Matrix: aqueous, Naphthalene 0.63 ug/L and 2-Methylnaphthalene 0.46 ug/L - no action. MB, Matrix: sediment - ND.
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		WG277241-2, Sediment LCS, Benzo (a)anthracene and Benzo(b)Fluoranthene under-recovered. The X flag was removed and replaced with UJ. The % recovery was under-recovered but w/i the window to J/UJ.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			PR79-WT-023-SW-01 - no action, removed qualification from Anthracene was w/i QC window. PR79-WT-023-PW-01 - see ADR report PR79-WT-023-SD-01 - see ADR report
Were MS/MSD recoveries within project acceptance limits?		•		see ADR report
Was the MS/MSD RPD within project acceptance limits?		•		see ADR report
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		lab LOQs meet QAPP PQLs (SW, PW, SD) but not all meet Project Action Limits (as noted in QAPP) 16 analytes in 3 SW3550 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high for chrysene - results in PR79-WT-005-SD-01, PR79-WT-023-SD-01 may be biased high. CCVs analyzed past tune time, 2 addl consec CCVs analyzed. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3452

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		NE14ICS1, soil prep blank, CHROMIUM, IRON, MAGNESIUM, POTASSIUM, SODIUM all reported as J. NE15ICS2, UMOLE/G - ND. NE07ICW2, Aq prep blank, IRON, MAGNESIUM J values.
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		PR79-WT-023-SW-01 - OK, PR79-WT-023-SW-01-F -OK, PR79-WT-023-PW-01 - SODIUM, TOTAL and CALCIUM, TOTAL over -recovered - see ADR report - no action 4X.PR79-WT-023-PW-01-F - OK, PR79-WT-023-SD-01 - CALCIUM, TOTAL over-recovered. Lead and Zinc under-recovered in SEM.
Was the MS/MSD RPD within project acceptance limits?		•		PR79-WT-023-SD-01, IRON TOTAL - no action sample result >4X spike and MAGNESIUM, TOTAL high recovery - J result. COPPER, SEM high recovery - J results.
Were the post spike recoveries within project acceptance limits?		•		PR79-WT-023-SD-01 - SILVER, TOTAL3.4% recovery, SILVER, SEM - 27.6% recovery. No action required - MS/MSD ok for Silver.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		NE14IMS1, soil ND. NE07IMW2, Aq prep blank, BERYLLIUM, LEAD J values.
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		PR79-WT-023-SW-01 - OK, PR79-WT-023-SW-01-F -OK, PR79-WT-023-PW-01 -OK, PR79-WT-023-PW-01-F - OK, PR79-WT-023-SD-01 - Antimony total under -recovered, see ADR report.
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		All 6020A samples diluted 5X to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. 3 analytes in 3 FLDFLT samples did not meet the requested RLs. 6 analytes in 3 SW3050B samples did not meet the requested RLs. 3 analytes in 3 TOTAL samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			NE13HGW2, aq prep blank -ND
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?		•		PR79-WT-023-PW-01 - Hg high recovery - no action - MS/MSD - ok.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			NE21HGS1, soil prep blank -ND
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			PR79-WT-023-SW-01 - OK, PR79-WT-023-SW-01-F -OK, PR79-WT-023-PW-01 - OK, PR79-WT-023-PW-01-F - OK, PR79-WT-023-SD-01 - OK
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See ADR report
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		VOC-SIM TB-01-SW-01, benzene 0.011J ug/L
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		WG277634-1 Bromomethane 160% [53-143],
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			voc-sim - SW and PW, SW vinyl chloride over-recovered - sample ND - no action. PW vinyl chloride over-recovered - sample ND - no action. SED - see ADR report. Please note acetone and 2-butanone RPD out - reason code added in database for both...this was not done by ADR. Full scan SW MS/MSD - see ADR report.
Were MS/MSD recoveries within project acceptance limits?		•		
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		14 analytes in 2 SW5035 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed as part of 2A validation: Low IS PR79-WT-023-SD-01 - assoc pos results for acetone, MEK, methylene chloride may be biased high. Low IS PR79-WT-005-SD-01 - assoc pos result for acetone may be biased high. CCV above criteria for t-butyl alcohol - assoc results ND. ICV high for carbon disulfide, chloroethane - assoc results ND. CCV high for carbon disulfide - assoc results ND. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformances. Chloroethane and Carbon disulfide exceeded limits.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?		•		outside of 24 hour HT, J results
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.9, 0.4, 0.8, 0.4C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		MS recovery 134% [75-125]. J+ results
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3453

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3453
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-101-AS-01	SN3453-3	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-101-AS-01	SN3453-7	Solid	Field Sample/N			X					
PR79-SB-101-BS-01	SN3453-4	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-101-BS-01	SN3453-8	Solid	Field Sample/N			X					
PR79-SB-106-AS-01	SN3453-1	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-106-AS-01	SN3453-5	Solid	Field Sample/N			X					
PR79-SB-106-BS-01	SN3453-2	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-106-BS-01	SN3453-6	Solid	Field Sample/N			X					

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3453. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 18 results (7.17%) out of the 251 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

September 17, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277241-2 (BS)/ WG277241-2	Benzo (b)fluoranthene	41.23	53 - 128	10 - 128	percent	J/UJ	C	
WG277241-2 (BS)/ WG277241-2	Benzo (a)anthracene	49.63	54 - 122	10 - 122	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-101-AS-01	N	Benzo(a)anthracene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-101-AS-01	N	Benzo(b)fluoranthene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-101-BS-01	N	Benzo(a)anthracene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C
PR79-SB-101-BS-01	N	Benzo(b)fluoranthene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C
PR79-SB-106-AS-01	N	Benzo(a)anthracene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-106-AS-01	N	Benzo(b)fluoranthene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-106-BS-01	N	Benzo(a)anthracene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-106-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C SW1312, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-106-BS-01 (SD)/ SN3453-006P	Lead	76.50	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-106-BS-01 (SD)/ SN3453-006P	Thallium	78.50	85 - 114	30 - 125	percent	J/UJ	M	
PR79-SB-106-BS-01 (MS)/ SN3453-006S	Lead	76.00	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-106-BS-01 (MS)/ SN3453-006S	Thallium	80.50	85 - 114	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-106-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M
PR79-SB-106-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Silver	0.04800	< 0.027	< 1	mg/kg	U/None	L	
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Aluminum	0.8500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Sodium	5.500	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-101-AS-01	N	Silver	0.940	0.410 J	0.940 U		mg/kg	L
PR79-SB-101-AS-01	N	Sodium	94.0	40.6 J	47.0 U		mg/kg	L
PR79-SB-101-BS-01	N	Silver	0.910	0.463 J	0.910 U		mg/kg	L
PR79-SB-106-AS-01	N	Silver	1.10	0.543 J	1.10 U		mg/kg	L
PR79-SB-106-BS-01	N	Silver	0.990	0.603 J	0.990 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE11IMS1 (LB)/ PBSNE11IMS1	Beryllium	0.009800	< 0.0041	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-101-AS-01 (N)/ SN3453-3		43.85	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-106-AS-01 (N)/ SN3453-1		46.35	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-101-AS-01	N	pH	0.100	6.40	6.40 J	-	ph units	H2
PR79-SB-106-AS-01	N	pH	0.100	6.80	6.80 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-106-AS-01 (MS)/ WG277434-3	Total Organic Carbon	75.59	80 - 120	30 - 120	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-106-AS-01	N	Total Organic Carbon	650	12000	12000 J	-	ug/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-101-AS-01	N	Benzo(a)anthracene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-101-AS-01	N	Benzo(b)fluoranthene	0.0200	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-101-BS-01	N	Benzo(a)anthracene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C
PR79-SB-101-BS-01	N	Benzo(b)fluoranthene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C
PR79-SB-106-AS-01	N	Benzo(a)anthracene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-106-AS-01	N	Benzo(b)fluoranthene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-106-BS-01	N	Benzo(a)anthracene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C
PR79-SB-106-BS-01	N	Benzo(b)fluoranthene	0.0210	0.0100 UL	0.0100 UJ		mg/kg	C

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-101-AS-01	N	Silver	0.940	0.410 J	0.940 U		mg/kg	L
PR79-SB-101-AS-01	N	Sodium	94.0	40.6 J	47.0 U		mg/kg	L
PR79-SB-101-BS-01	N	Silver	0.910	0.463 J	0.910 U		mg/kg	L
PR79-SB-106-AS-01	N	Silver	1.10	0.543 J	1.10 U		mg/kg	L
PR79-SB-106-BS-01	N	Silver	0.990	0.603 J	0.990 U		mg/kg	L

Test Method: SW6010C Extraction Method: SW3010A Leach: SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-106-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M
PR79-SB-106-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-101-AS-01	N	pH	0.100	6.40	6.40 J	-	ph units	H2
PR79-SB-106-AS-01	N	pH	0.100	6.80	6.80 J	-	ph units	H2

Test Method: SW9060A Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-106-AS-01	N	Total Organic Carbon	650	12000	12000 J	-	ug/g	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Results with Modified Qualifiers

No qualifiers associated with this sample delivery group were modified manually.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H2	Prep Hold Time
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	no FB in this data set
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report: Benzo(a)anthracene and Benzo(b)Fluoranthene below criteria.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high for chrysene - assoc pos result in PR79-SB-101-AS-01 may be biased high. CCV high for 14-dioxane, 2-methylnaphthalene - assoc pos results in PR79-SB-106-AS-01, PR79-SB-106-BS-01, PR79-SB-101-AS-01, PR79-SB-101-BS-01 may be biased high. Results ND for 2-methylnaphthalene, no actions. CCV analyzed past tune, 2 addl consec CCVs analyzed. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3453

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			SPLP analytes as requested
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report: Al, Ag, Na detected <LOQ
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			SPLP only
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report. %Rs below criteria for Pb, Tl, PDS ok, RPD ok
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3453

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		See outlier report: Be detected <LOQ
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		SPLP only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		SW6020A/SW3050B See anomalies report: 3 analytes in 1 sample did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3453

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	SPLP only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report: 2 analytes in 2 samples did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this data set
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3453

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		see outlier report; samples analyzed >24h, qualified J
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		MS below limits, MSD ok. See outlier report.
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3498

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3498
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-PW-FD01-01	SN3498-21		Field Duplicate/FD	X		X	X		X		X			X		
PR79-PW-FD01-01-F	SN3498-22		Field Duplicate/FD					X		X		X				
PR79-WT-014-PW-01	SN3498-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-014-PW-01-F	SN3498-4		Field Sample/N					X		X		X				
PR79-WT-015-PW-01	SN3498-9		Field Sample/N	X		X	X		X		X			X		
PR79-WT-015-PW-01-F	SN3498-10		Field Sample/N					X		X		X				
PR79-WT-018-PW-01	SN3498-15		Field Sample/N	X		X	X		X		X			X		
PR79-WT-018-PW-01-F	SN3498-16		Field Sample/N					X		X		X				
PR79-WT-019-PW-01	SN3498-27		Field Sample/N	X		X	X		X		X			X		
PR79-WT-019-PW-01-F	SN3498-28		Field Sample/N					X		X		X				
PR79-WT-020-PW-01	SN3498-33		Field Sample/N	X		X	X		X		X			X		
PR79-WT-020-PW-01-F	SN3498-34		Field Sample/N					X		X		X				
PR79-SD-FD01-01	SN3498-23	Solid	Field Duplicate/FD			X	X		X				X	X	X	X
PR79-SD-FD01-01	SN3498-24	Solid	Field Duplicate/FD		X		X									
PR79-WT-014-SD-01	SN3498-5	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-014-SD-01	SN3498-6	Solid	Field Sample/N		X		X									
PR79-WT-015-SD-01	SN3498-11	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-015-SD-01	SN3498-12	Solid	Field Sample/N		X		X									
PR79-WT-018-SD-01	SN3498-17	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-018-SD-01	SN3498-18	Solid	Field Sample/N		X		X									

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-PW-FD01-01	SN3498-21		Field Duplicate/FD	X
PR79-PW-FD01-01-F	SN3498-22		Field Duplicate/FD	
PR79-WT-014-PW-01	SN3498-3		Field Sample/N	X
PR79-WT-014-PW-01-F	SN3498-4		Field Sample/N	
PR79-WT-015-PW-01	SN3498-9		Field Sample/N	X
PR79-WT-015-PW-01-F	SN3498-10		Field Sample/N	
PR79-WT-018-PW-01	SN3498-15		Field Sample/N	X
PR79-WT-018-PW-01-F	SN3498-16		Field Sample/N	
PR79-WT-019-PW-01	SN3498-27		Field Sample/N	X
PR79-WT-019-PW-01-F	SN3498-28		Field Sample/N	
PR79-WT-020-PW-01	SN3498-33		Field Sample/N	X
PR79-WT-020-PW-01-F	SN3498-34		Field Sample/N	
PR79-SD-FD01-01	SN3498-23	Solid	Field Duplicate/FD	
PR79-SD-FD01-01	SN3498-24	Solid	Field Duplicate/FD	
PR79-WT-014-SD-01	SN3498-5	Solid	Field Sample/N	
PR79-WT-014-SD-01	SN3498-6	Solid	Field Sample/N	
PR79-WT-015-SD-01	SN3498-11	Solid	Field Sample/N	
PR79-WT-015-SD-01	SN3498-12	Solid	Field Sample/N	
PR79-WT-018-SD-01	SN3498-17	Solid	Field Sample/N	
PR79-WT-018-SD-01	SN3498-18	Solid	Field Sample/N	

Data Validation Report for SN3498

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-019-SD-01	SN3498-29	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-019-SD-01	SN3498-30	Solid	Field Sample/N		X		X									
PR79-WT-020-SD-01	SN3498-35	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-020-SD-01	SN3498-36	Solid	Field Sample/N		X		X									
TB-02-SD-01	SN3498-37	Solid	Trip Blank/TB											X		
PR79-SW-FD01-01	SN3498-19	Water	Field Duplicate/FD	X		X	X		X		X			X		
PR79-SW-FD01-01-F	SN3498-20	Water	Field Duplicate/FD					X		X		X				
PR79-WT-014-SW-01	SN3498-1	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-014-SW-01-F	SN3498-2	Water	Field Sample/N					X		X		X				
PR79-WT-015-SW-01	SN3498-7	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-015-SW-01-F	SN3498-8	Water	Field Sample/N					X		X		X				
PR79-WT-018-SW-01	SN3498-13	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-018-SW-01-F	SN3498-14	Water	Field Sample/N					X		X		X				
PR79-WT-019-SW-01	SN3498-25	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-019-SW-01-F	SN3498-26	Water	Field Sample/N					X		X		X				
PR79-WT-020-SW-01	SN3498-31	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-020-SW-01-F	SN3498-32	Water	Field Sample/N					X		X		X				
TB-02-SW-01	SN3498-38	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-019-SD-01	SN3498-29	Solid	Field Sample/N	
PR79-WT-019-SD-01	SN3498-30	Solid	Field Sample/N	
PR79-WT-020-SD-01	SN3498-35	Solid	Field Sample/N	
PR79-WT-020-SD-01	SN3498-36	Solid	Field Sample/N	
TB-02-SD-01	SN3498-37	Solid	Trip Blank/TB	
PR79-SW-FD01-01	SN3498-19	Water	Field Duplicate/FD	X
PR79-SW-FD01-01-F	SN3498-20	Water	Field Duplicate/FD	
PR79-WT-014-SW-01	SN3498-1	Water	Field Sample/N	X
PR79-WT-014-SW-01-F	SN3498-2	Water	Field Sample/N	
PR79-WT-015-SW-01	SN3498-7	Water	Field Sample/N	X
PR79-WT-015-SW-01-F	SN3498-8	Water	Field Sample/N	
PR79-WT-018-SW-01	SN3498-13	Water	Field Sample/N	X
PR79-WT-018-SW-01-F	SN3498-14	Water	Field Sample/N	
PR79-WT-019-SW-01	SN3498-25	Water	Field Sample/N	X
PR79-WT-019-SW-01-F	SN3498-26	Water	Field Sample/N	
PR79-WT-020-SW-01	SN3498-31	Water	Field Sample/N	X
PR79-WT-020-SW-01-F	SN3498-32	Water	Field Sample/N	
TB-02-SW-01	SN3498-38	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3498. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 239 results (12.61%) out of the 1896 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Sample Receipt Condition Report: Sample times on SW-FD and PW-FD are reversed on sample containers (SW-FD @14:25). Did not receive grain size jar for SD-FD01.

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	% solids - ok
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	%solids - ok, VOC Freezer documentation - ok,
SW9045D	%solids - ok
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

Reviewed by Kristin Rutherford, Chemist, AECOM — July 24, 2020

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM — April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2340B, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-018-PW-01 (N)/ SN3498-21	Hardness (as CaCO3)	38.91	< 30	< 30	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for A2340B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD01-01	FD	Hardness (as CaCO3)	660	6190	6190 J		ug/l	D3
PR79-WT-018-PW-01	N	Hardness (as CaCO3)	660	9180	9180 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277379-1 (LB)/ WG277379-1	2-Methylnaphthalene	0.4600	< 0.077	< 0.2	ug/l	U/None	L	
WG277379-1 (LB)/ WG277379-1	Naphthalene	0.6300	< 0.064	< 0.2	ug/l	U/None	L	Blank is over 3X RL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277372-2 (BS)/ WG277372-2	1,4-Dioxane (p-Dioxane)	21.74	30 - 150	10 - 150	percent	J/UJ	C	
WG277372-2 (BS)/ WG277372-2	Benzo (b)fluoranthene	52.47	53 - 128	10 - 128	percent	J/UJ	C	
WG277372-2 (BS)/ WG277372-2	Benzo (a)anthracene	52.62	54 - 122	10 - 122	percent	J/UJ	C	
WG277641-2 (BS)/ WG277641-2	1,4-Dioxane (p-Dioxane)	27.74	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	1,4-Dioxane (p-Dioxane)	0.240	0.120 UL	0.120 UJ	-	mg/kg	C
PR79-SD-FD01-01	FD	Benzo(a)anthracene	0.0490	0.0170 JL	0.0170 J	-	mg/kg	C/TR
PR79-SD-FD01-01	FD	Benzo(b)fluoranthene	0.0490	0.0350 JL	0.0350 J	-	mg/kg	C/TR
PR79-WT-014-SD-01	N	1,4-Dioxane (p-Dioxane)	0.200	0.00240 JL	0.00240 J	-	mg/kg	C/TR
PR79-WT-014-SD-01	N	Benzo(a)anthracene	0.0400	0.00950 JL	0.00950 J	-	mg/kg	C/TR
PR79-WT-014-SD-01	N	Benzo(b)fluoranthene	0.0400	0.0180 JL	0.0180 J	-	mg/kg	C/TR
PR79-WT-015-SD-01	N	1,4-Dioxane (p-Dioxane)	0.200	0.00260 JL	0.00260 J	-	mg/kg	C/TR
PR79-WT-015-SD-01	N	Benzo(a)anthracene	0.0390	0.00720 JL	0.00720 J	-	mg/kg	C/TR
PR79-WT-015-SD-01	N	Benzo(b)fluoranthene	0.0390	0.0150 JL	0.0150 J	-	mg/kg	C/TR
PR79-WT-018-SD-01	N	1,4-Dioxane (p-Dioxane)	0.220	0.00440 JL	0.00440 J	-	mg/kg	C/TR
PR79-WT-019-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-WT-019-SD-01	N	Benzo(a)anthracene	0.0230	0.0110 UL	0.0110 UJ	-	mg/kg	C
PR79-WT-019-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0110 UL	0.0110 UJ	-	mg/kg	C
PR79-WT-020-SD-01	N	1,4-Dioxane (p-Dioxane)	0.180	0.00280 JL	0.00280 J	-	mg/kg	C/TR
PR79-WT-020-SD-01	N	Benzo(a)anthracene	0.0350	0.00440 JL	0.00440 J	-	mg/kg	C/TR
PR79-WT-020-SD-01	N	Benzo(b)fluoranthene	0.0350	0.00970 JL	0.00970 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-020-PW-01 (N)/ SN3498-33		7.080	< 7	< 14	days	J/UJ	H2	Prep Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SW-FD01-01 (FD)/ SN3498-19	2-Methylnaphthalene-d10	97.10	43 - 92	10 - 92	percent	J/None	I	
PR79-WT-015-PW-01 (N)/ SN3498-9	2-Methylnaphthalene-d10	96.40	43 - 92	10 - 92	percent	J/None	I	
PR79-WT-018-SW-01 (N)/ SN3498-13	2-Methylnaphthalene-d10	97.60	43 - 92	10 - 92	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-019-PW-01-F (MS)/ SN3498-028S	Calcium	86.40	87 - 113	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-018-SD-01 (N)/ SN3498-24	Nickel	0.02229	< 0.0072	< 0.0072	umoles/ g	J/None	D3	
PR79-WT-018-SD-01 (N)/ SN3498-24	Zinc	0.07200	< 0.013	< 0.013	umoles/ g	J/None	D3	
PR79-WT-018-SD-01 (N)/ SN3498-24	Lead	106.7	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	Lead	0.00120	0.0805	0.0805 J		umoles/ g	D3
PR79-SD-FD01-01	FD	Nickel	0.00900	0.0304	0.0304 J		umoles/ g	D3
PR79-SD-FD01-01	FD	Zinc	0.0170	0.0984	0.0984 J		umoles/ g	D3
PR79-WT-018-SD-01	N	Lead	0.00100	0.0245	0.0245 J		umoles/ g	D3
PR79-WT-018-SD-01	N	Nickel	0.00720	0.00811	0.00811 J		umoles/ g	D3
PR79-WT-018-SD-01	N	Zinc	0.0130	0.0264	0.0264 J		umoles/ g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-018-SD-01 (N)/ SN3498-23	Nickel	4.380	< 2.1	< 2.1	mg/kg	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	Nickel	2.40	8.82	8.82 J		mg/kg	D3
PR79-WT-018-SD-01	N	Nickel	2.10	13.2	13.2 J		mg/kg	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Nickel	0.05000	< 0.044	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Chromium	0.07400	< 0.026	< 1	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Magnesium	1.500	< 0.68	< 10	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Potassium	20.00	< 2.9	< 100	mg/kg	U/None	L	
PBSNE15ICS1 (LB)/ PBSNE15ICS1	Sodium	6.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	Sodium	240	111 J	120 U		mg/kg	L
PR79-WT-014-SD-01	N	Sodium	140	69.5 J	140 U		mg/kg	L
PR79-WT-015-SD-01	N	Sodium	140	119 J	140 U		mg/kg	L
PR79-WT-018-SD-01	N	Sodium	210	150 J	210 U		mg/kg	L
PR79-WT-019-SD-01	N	Sodium	81.0	53.0 J	81.0 U		mg/kg	L
PR79-WT-020-SD-01	N	Sodium	170	81.5 J	85.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-018-PW-01 (N)/ SN3498-21	Barium	21.30	< 5	< 5	ug/l	J/None	D3	
PR79-WT-018-PW-01 (N)/ SN3498-21	Manganese	42.03	< 30	< 30	rpd	J/None	D3	
PR79-WT-018-PW-01 (N)/ SN3498-21	Magnesium	55.16	< 30	< 30	rpd	J/None	D3	
PR79-WT-018-PW-01 (N)/ SN3498-21	Iron	91.89	< 30	< 30	rpd	J/None	D3	
PR79-WT-018-PW-01 (N)/ SN3498-21	Aluminum	92.93	< 30	< 30	rpd	J/None	D3	
PR79-WT-018-SW-01 (N)/ SN3498-19	Iron	127.0	< 100	< 100	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD01-01	FD	Iron	100	1200	1200 J		ug/l	D3
PR79-PW-FD01-01	FD	Aluminum	300	2460	2460 J		ug/l	D3
PR79-PW-FD01-01	FD	Barium	5.00	20.8	20.8 J		ug/l	D3
PR79-PW-FD01-01	FD	Magnesium	100	772	772 J		ug/l	D3
PR79-PW-FD01-01	FD	Manganese	5.00	42.1	42.1 J		ug/l	D3
PR79-SW-FD01-01	FD	Iron	100	175	175 J		ug/l	D3
PR79-WT-018-PW-01	N	Iron	100	3240	3240 J		ug/l	D3
PR79-WT-018-PW-01	N	Aluminum	300	6730	6730 J		ug/l	D3
PR79-WT-018-PW-01	N	Barium	5.00	42.1	42.1 J		ug/l	D3
PR79-WT-018-PW-01	N	Magnesium	100	1360	1360 J		ug/l	D3
PR79-WT-018-PW-01	N	Manganese	5.00	64.5	64.5 J		ug/l	D3
PR79-WT-018-SW-01	N	Iron	100	302	302 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE11ICW1 (LB)/ PBWNE11ICW1	Iron	11.00	< 5.4	< 100	ug/l	U/None	L	
PBWNE11ICW1 (LB)/ PBWNE11ICW1	Magnesium	11.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE11ICW1 (LB)/ PBWNE11ICW1	Potassium	99.00	< 41	< 1000	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Chromium	1.600	< 0.36	< 10	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Iron	14.00	< 5.4	< 100	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Potassium	150.0	< 41	< 1000	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Copper	2.300	< 0.63	< 25	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Calcium	25.00	< 11	< 100	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Vanadium	3.680	< 0.23	< 10	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Zinc	4.200	< 0.72	< 20	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Aluminum	41.00	< 15	< 300	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Magnesium	50.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE11ICW2 (LB)/ PBWNE11ICW2	Sodium	84.00	< 24	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SW-FD01-01	FD	Potassium	1000	790 J	1000 U		ug/l	L
PR79-WT-015-SW-01	N	Iron	100	94.5 J	100 U		ug/l	L
PR79-WT-015-SW-01	N	Potassium	1000	965 J	1000 U		ug/l	L
PR79-WT-018-SW-01	N	Potassium	1000	890 J	1000 U		ug/l	L
PR79-WT-019-SW-01	N	Potassium	1000	748 J	1000 U		ug/l	L
PR79-WT-020-PW-01	N	Chromium	10.0	3.86 J	4.00 U		ug/l	L
PR79-WT-020-PW-01	N	Copper	25.0	1.70 J	10.0 U		ug/l	L
PR79-WT-020-PW-01	N	Vanadium	10.0	5.08 J	10.0 U		ug/l	L
PR79-WT-020-PW-01	N	Zinc	20.0	8.68 J	10.0 U		ug/l	L
PR79-WT-020-SW-01	N	Iron	100	99.3 J	100 U		ug/l	L
PR79-WT-020-SW-01	N	Aluminum	300	202 J	300 U		ug/l	L
PR79-WT-020-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	L
PR79-WT-020-SW-01	N	Potassium	1000	845 J	1000 U		ug/l	L

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-020-SW-01	N	Vanadium	10.0	0.540 J	4.00 U		ug/l	L
PR79-WT-020-SW-01	N	Zinc	20.0	1.80 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE11IMW2 (EB)	Beryllium	0.06600	< 0.0077	< 0.2	ug/l	None/None	V	
PBWNE11IMW2 (EB)	Cobalt	0.09400	< 0.0046	< 0.2	ug/l	None/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE11IMW2 (LB)	Cadmium	0.05600	< 0.029	< 1	ug/l	None/None	L	
PBWNE11IMW2 (LB)	Beryllium	0.06600	< 0.034	< 1	ug/l	None/None	L	
PBWNE11IMW2 (LB)	Cobalt	0.09400	< 0.0061	< 1	ug/l	None/None	L	
PBWNE11IMW2 (LB)	Antimony	0.1200	< 0.054	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-020-SW-01-F	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-019-PW-01-F (MS)/ SN3498-028S	Cobalt	116.3	86 - 115	30 - 125	percent	J/None	M	
PR79-WT-019-PW-01-F (MS)/ SN3498-028S	Silver	117.2	85 - 116	30 - 125	percent	J/None	M	
PR79-WT-019-PW-01-F (MS)/ SN3498-028S	Cadmium	120.0	87 - 115	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-019-PW-01-F	N	Cobalt	1.00	0.300 JN	0.300 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-018-PW-01 (N)/ SN3498-21	Cobalt	1.247	< 1	< 1	ug/l	J/None	D3	
PR79-WT-018-PW-01 (N)/ SN3498-21	Nickel	2.310	< 2	< 2	ug/l	J/None	D3	
PR79-WT-018-PW-01 (N)/ SN3498-21	Lead	5.320	< 1	< 1	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD01-01	FD	Cobalt	1.00	0.973 J	0.973 J		ug/l	D3/TR
PR79-PW-FD01-01	FD	Lead	1.00	2.45	2.45 J		ug/l	D3
PR79-PW-FD01-01	FD	Nickel	2.00	1.40 J	1.40 J		ug/l	D3/TR
PR79-WT-018-PW-01	N	Cobalt	1.00	2.22	2.22 J		ug/l	D3
PR79-WT-018-PW-01	N	Lead	1.00	7.77	7.77 J		ug/l	D3
PR79-WT-018-PW-01	N	Nickel	2.00	3.71	3.71 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE11IMW2 (LB)/ PBWNE11IMW2	Cadmium	0.05600	< 0.03	< 1	ug/l	U/None	L	
PBWNE11IMW2 (LB)/ PBWNE11IMW2	Beryllium	0.06600	< 0.034	< 1	ug/l	U/None	L	
PBWNE11IMW2 (LB)/ PBWNE11IMW2	Cobalt	0.09400	< 0.061	< 1	ug/l	U/None	L	
PBWNE11IMW2 (LB)/ PBWNE11IMW2	Antimony	0.1200	< 0.054	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-020-PW-01	N	Beryllium	1.00	0.130 J	0.200 U		ug/l	L
PR79-WT-020-PW-01	N	Cadmium	1.00	0.0830 J	0.200 U		ug/l	L
PR79-WT-020-SW-01	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	L
PR79-WT-020-SW-01	N	Cobalt	1.00	0.140 J	0.300 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-SD-01 (EB)	Methylene chloride	0.01900	< 0.019	< 0.005	mg/kg	None/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277634-1 (BS)/ WG277634-1	Bromomethane	160.0	53 - 143	10 - 143	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SD-FD01-01 (FD)/ SN3498-23	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	76.40	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-014-SD-01 (N)/ SN3498-5	Dibromofluoromethane	120.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-014-SD-01 (N)/ SN3498-5	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	65.50	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-018-SD-01 (N)/ SN3498-17	Dibromofluoromethane	130.0	78 - 119	10 - 119	percent	J/None	I	
PR79-WT-018-SD-01 (N)/ SN3498-17	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	67.70	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-020-SD-01 (N)/ SN3498-35	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	66.30	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	1,1,1-Trichloroethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,1-Dichloroethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,1-Dichloroethene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2,3-Trichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2,4-Trichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2,4-Trimethylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2-Dichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,3,5-Trimethylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,3-Dichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	2-Butanone (MEK)	0.0700	0.0720	0.0720 J		mg/kg	I
PR79-SD-FD01-01	FD	4-Methyl-2-pentanone (MIBK)	0.0700	0.0350 U	0.0350 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Acetone	0.0700	0.600	0.600 J		mg/kg	I
PR79-SD-FD01-01	FD	Benzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Bromodichloromethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Bromomethane	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Carbon disulfide	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Chloroethane	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Chloroform	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Chloromethane	0.0280	0.0140 U	0.0140 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	cis-1,2-Dichloroethene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Dibromochloromethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Ethylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Isopropylbenzene (Cumene)	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	m,p-Xylene	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Methylene chloride	0.0700	0.0350 U	0.0350 UJ		mg/kg	I
PR79-SD-FD01-01	FD	n-Butylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	n-Propylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	o-Xylene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	p-Cymene (p-Isopropyltoluene)	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	sec-Butylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	tert-Butyl alcohol	0.0700	0.0350 U	0.0350 UJ		mg/kg	I
PR79-SD-FD01-01	FD	tert-Butylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Toluene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	trans-1,2-Dichloroethene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Trichloroethene (TCE)	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Vinyl chloride	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,1,1-Trichloroethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,1-Dichloroethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,1-Dichloroethene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2,3-Trichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2,4-Trichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2,4-Trimethylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2-Dichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,3,5-Trimethylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,3-Dichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	2-Butanone (MEK)	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Acetone	0.0420	0.120	0.120 J		mg/kg	I
PR79-WT-014-SD-01	N	Benzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Bromodichloromethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Bromomethane	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Carbon disulfide	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Chloroethane	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Chloroform	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Chloromethane	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	cis-1,2-Dichloroethene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Dibromochloromethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Ethylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Isopropylbenzene (Cumene)	0.00850	0.00420 U	0.00420 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-014-SD-01	N	m,p-Xylene	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Methylene chloride	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	n-Butylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	n-Propylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	o-Xylene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	sec-Butylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	tert-Butyl alcohol	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	tert-Butylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Toluene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	trans-1,2-Dichloroethene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Trichloroethene (TCE)	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Vinyl chloride	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,1,1-Trichloroethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,1-Dichloroethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,1-Dichloroethene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2,3-Trichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2,4-Trichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2,4-Trimethylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2-Dichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,3,5-Trimethylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,3-Dichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	2-Butanone (MEK)	0.0600	0.0430 J	0.0430 J		mg/kg	I/TR
PR79-WT-018-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0600	0.0300 U	0.0300 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Acetone	0.0600	0.360	0.360 J		mg/kg	I
PR79-WT-018-SD-01	N	Benzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Bromodichloromethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Bromomethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Carbon disulfide	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Chloroethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Chloroform	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Chloromethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	cis-1,2-Dichloroethene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Dibromochloromethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Ethylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Isopropylbenzene (Cumene)	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	m,p-Xylene	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Methylene chloride	0.0600	0.0300 U	0.0300 UJ		mg/kg	I
PR79-WT-018-SD-01	N	n-Butylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	n-Propylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	o-Xylene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-018-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	sec-Butylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	tert-Butyl alcohol	0.0600	0.0300 U	0.0300 UJ		mg/kg	I
PR79-WT-018-SD-01	N	tert-Butylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Toluene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	trans-1,2-Dichloroethene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Trichloroethene (TCE)	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Vinyl chloride	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,1-Dichloroethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,1-Dichloroethene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	2-Butanone (MEK)	0.0520	0.170	0.170 J		mg/kg	I
PR79-WT-020-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0520	0.0260 U	0.0260 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Acetone	0.0520	0.520	0.520 J		mg/kg	I
PR79-WT-020-SD-01	N	Benzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Bromodichloromethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Bromomethane	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Carbon disulfide	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Chloroethane	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Chloroform	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Chloromethane	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Dibromochloromethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Ethylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	m,p-Xylene	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Methylene chloride	0.0520	0.0190 J	0.0260 UJ		mg/kg	T/I
PR79-WT-020-SD-01	N	n-Butylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	n-Propylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	o-Xylene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	sec-Butylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	tert-Butyl alcohol	0.0520	0.0260 U	0.0260 UJ		mg/kg	I
PR79-WT-020-SD-01	N	tert-Butylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-020-SD-01	N	Toluene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Trichloroethene (TCE)	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Vinyl chloride	0.0210	0.0100 U	0.0100 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-020-SD-01 (STD)	1,2-Dichloroethane-d4	159.0	136 - 71	10 - 136	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-SD-01 (TB)/ SN3498-37	Methylene chloride	0.01900	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Trip Blank for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-019-SD-01	N	Methylene chloride	0.0280	0.00980 J	0.0140 U		mg/kg	T
PR79-WT-020-SD-01	N	Methylene chloride	0.0520	0.0190 J	0.0260 UJ		mg/kg	T/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SD-FD01-01 (FD)/ SN3498-23		43.08	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-014-SD-01 (N)/ SN3498-5		41.92	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-015-SD-01 (N)/ SN3498-11		44.08	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-018-SD-01 (N)/ SN3498-17		43.17	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-019-SD-01 (N)/ SN3498-29		45.92	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-020-SD-01 (N)/ SN3498-35		47.08	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-020-SD-01 (N)/ WG277386-2		47.08	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	pH	0.100	5.20	5.20 J	-	ph units	H2
PR79-WT-014-SD-01	N	pH	0.100	6.60	6.60 J	-	ph units	H2
PR79-WT-015-SD-01	N	pH	0.100	6.80	6.80 J	-	ph units	H2
PR79-WT-018-SD-01	N	pH	0.100	5.20	5.20 J	-	ph units	H2
PR79-WT-019-SD-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2
PR79-WT-020-SD-01	N	pH	0.100	6.00	6.00 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-02-SW-01 (TB)/ SN3498-38	Benzene	0.01100	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: A2340B Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD01-01	FD	Hardness (as CaCO3)	660	6190	6190 J		ug/l	D3
PR79-WT-018-PW-01	N	Hardness (as CaCO3)	660	9180	9180 J		ug/l	D3

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	1,4-Dioxane (p-Dioxane)	0.240	0.120 UL	0.120 UJ	-	mg/kg	C
PR79-SD-FD01-01	FD	Benzo(a)anthracene	0.0490	0.0170 JL	0.0170 J	-	mg/kg	C/TR
PR79-SD-FD01-01	FD	Benzo(b)fluoranthene	0.0490	0.0350 JL	0.0350 J	-	mg/kg	C/TR
PR79-WT-014-SD-01	N	1,4-Dioxane (p-Dioxane)	0.200	0.00240 JL	0.00240 J	-	mg/kg	C/TR
PR79-WT-014-SD-01	N	Benzo(a)anthracene	0.0400	0.00950 JL	0.00950 J	-	mg/kg	C/TR
PR79-WT-014-SD-01	N	Benzo(b)fluoranthene	0.0400	0.0180 JL	0.0180 J	-	mg/kg	C/TR
PR79-WT-015-SD-01	N	1,4-Dioxane (p-Dioxane)	0.200	0.00260 JL	0.00260 J	-	mg/kg	C/TR
PR79-WT-015-SD-01	N	Benzo(a)anthracene	0.0390	0.00720 JL	0.00720 J	-	mg/kg	C/TR
PR79-WT-015-SD-01	N	Benzo(b)fluoranthene	0.0390	0.0150 JL	0.0150 J	-	mg/kg	C/TR
PR79-WT-018-SD-01	N	1,4-Dioxane (p-Dioxane)	0.220	0.00440 JL	0.00440 J	-	mg/kg	C/TR
PR79-WT-019-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-WT-019-SD-01	N	Benzo(a)anthracene	0.0230	0.0110 UL	0.0110 UJ	-	mg/kg	C
PR79-WT-019-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0110 UL	0.0110 UJ	-	mg/kg	C
PR79-WT-020-SD-01	N	1,4-Dioxane (p-Dioxane)	0.180	0.00280 JL	0.00280 J	-	mg/kg	C/TR
PR79-WT-020-SD-01	N	Benzo(a)anthracene	0.0350	0.00440 JL	0.00440 J	-	mg/kg	C/TR
PR79-WT-020-SD-01	N	Benzo(b)fluoranthene	0.0350	0.00970 JL	0.00970 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	Lead	0.00120	0.0805	0.0805 J		umoles/g	D3
PR79-SD-FD01-01	FD	Nickel	0.00900	0.0304	0.0304 J		umoles/g	D3
PR79-SD-FD01-01	FD	Zinc	0.0170	0.0984	0.0984 J		umoles/g	D3
PR79-WT-018-SD-01	N	Lead	0.00100	0.0245	0.0245 J		umoles/g	D3
PR79-WT-018-SD-01	N	Nickel	0.00720	0.00811	0.00811 J		umoles/g	D3
PR79-WT-018-SD-01	N	Zinc	0.0130	0.0264	0.0264 J		umoles/g	D3

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	Sodium	240	111 J	120 U		mg/kg	L
PR79-SD-FD01-01	FD	Nickel	2.40	8.82	8.82 J		mg/kg	D3
PR79-WT-014-SD-01	N	Sodium	140	69.5 J	140 U		mg/kg	L
PR79-WT-015-SD-01	N	Sodium	140	119 J	140 U		mg/kg	L
PR79-WT-018-SD-01	N	Sodium	210	150 J	210 U		mg/kg	L

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-018-SD-01	N	Nickel	2.10	13.2	13.2 J		mg/kg	D3
PR79-WT-019-SD-01	N	Sodium	81.0	53.0 J	81.0 U		mg/kg	L
PR79-WT-020-SD-01	N	Sodium	170	81.5 J	85.0 U		mg/kg	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD01-01	FD	Iron	100	1200	1200 J		ug/l	D3
PR79-PW-FD01-01	FD	Aluminum	300	2460	2460 J		ug/l	D3
PR79-PW-FD01-01	FD	Barium	5.00	20.8	20.8 J		ug/l	D3
PR79-PW-FD01-01	FD	Magnesium	100	772	772 J		ug/l	D3
PR79-PW-FD01-01	FD	Manganese	5.00	42.1	42.1 J		ug/l	D3
PR79-SW-FD01-01	FD	Potassium	1000	790 J	1000 U		ug/l	L
PR79-SW-FD01-01	FD	Iron	100	175	175 J		ug/l	D3
PR79-WT-015-SW-01	N	Iron	100	94.5 J	100 U		ug/l	L
PR79-WT-015-SW-01	N	Potassium	1000	965 J	1000 U		ug/l	L
PR79-WT-018-PW-01	N	Iron	100	3240	3240 J		ug/l	D3
PR79-WT-018-PW-01	N	Aluminum	300	6730	6730 J		ug/l	D3
PR79-WT-018-PW-01	N	Barium	5.00	42.1	42.1 J		ug/l	D3
PR79-WT-018-PW-01	N	Magnesium	100	1360	1360 J		ug/l	D3
PR79-WT-018-PW-01	N	Manganese	5.00	64.5	64.5 J		ug/l	D3
PR79-WT-018-SW-01	N	Potassium	1000	890 J	1000 U		ug/l	L
PR79-WT-018-SW-01	N	Iron	100	302	302 J		ug/l	D3
PR79-WT-019-SW-01	N	Potassium	1000	748 J	1000 U		ug/l	L
PR79-WT-020-PW-01	N	Chromium	10.0	3.86 J	4.00 U		ug/l	L
PR79-WT-020-PW-01	N	Copper	25.0	1.70 J	10.0 U		ug/l	L
PR79-WT-020-PW-01	N	Vanadium	10.0	5.08 J	10.0 U		ug/l	L
PR79-WT-020-PW-01	N	Zinc	20.0	8.68 J	10.0 U		ug/l	L
PR79-WT-020-SW-01	N	Iron	100	99.3 J	100 U		ug/l	L
PR79-WT-020-SW-01	N	Aluminum	300	202 J	300 U		ug/l	L
PR79-WT-020-SW-01	N	Copper	25.0	1.10 J	10.0 U		ug/l	L
PR79-WT-020-SW-01	N	Potassium	1000	845 J	1000 U		ug/l	L
PR79-WT-020-SW-01	N	Vanadium	10.0	0.540 J	4.00 U		ug/l	L
PR79-WT-020-SW-01	N	Zinc	20.0	1.80 J	10.0 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-019-PW-01-F	N	Cobalt	1.00	0.300 JN	0.300 J	+	ug/l	M/TR
PR79-WT-020-SW-01-F	N	Beryllium	1.00	0.0620 J	0.200 U		ug/l	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD01-01	FD	Cobalt	1.00	0.973 J	0.973 J		ug/l	D3/TR
PR79-PW-FD01-01	FD	Lead	1.00	2.45	2.45 J		ug/l	D3
PR79-PW-FD01-01	FD	Nickel	2.00	1.40 J	1.40 J		ug/l	D3/TR

Table of All Qualified Results

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-018-PW-01	N	Cobalt	1.00	2.22	2.22 J		ug/l	D3
PR79-WT-018-PW-01	N	Lead	1.00	7.77	7.77 J		ug/l	D3
PR79-WT-018-PW-01	N	Nickel	2.00	3.71	3.71 J		ug/l	D3
PR79-WT-020-PW-01	N	Beryllium	1.00	0.130 J	0.200 U		ug/l	L
PR79-WT-020-PW-01	N	Cadmium	1.00	0.0830 J	0.200 U		ug/l	L
PR79-WT-020-SW-01	N	Beryllium	1.00	0.0480 J	0.200 U		ug/l	L
PR79-WT-020-SW-01	N	Cobalt	1.00	0.140 J	0.300 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	1,1,1-Trichloroethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,1-Dichloroethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,1-Dichloroethene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2,3-Trichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2,4-Trichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2,4-Trimethylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,2-Dichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,3,5-Trimethylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	1,3-Dichlorobenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	2-Butanone (MEK)	0.0700	0.0720	0.0720 J		mg/kg	I
PR79-SD-FD01-01	FD	4-Methyl-2-pentanone (MIBK)	0.0700	0.0350 U	0.0350 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Acetone	0.0700	0.600	0.600 J		mg/kg	I
PR79-SD-FD01-01	FD	Benzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Bromodichloromethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Bromomethane	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Carbon disulfide	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Chloroethane	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Chloroform	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Chloromethane	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	cis-1,2-Dichloroethene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Dibromochloromethane	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Ethylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Isopropylbenzene (Cumene)	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	m,p-Xylene	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Methylene chloride	0.0700	0.0350 U	0.0350 UJ		mg/kg	I
PR79-SD-FD01-01	FD	n-Butylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	n-Propylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	o-Xylene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	p-Cymene (p-Isopropyltoluene)	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	sec-Butylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	tert-Butyl alcohol	0.0700	0.0350 U	0.0350 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	tert-Butylbenzene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Toluene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	trans-1,2-Dichloroethene	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Trichloroethene (TCE)	0.0140	0.00700 U	0.00700 UJ		mg/kg	I
PR79-SD-FD01-01	FD	Vinyl chloride	0.0280	0.0140 U	0.0140 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,1,1-Trichloroethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,1-Dichloroethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,1-Dichloroethene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2,3-Trichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2,4-Trichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2,4-Trimethylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,2-Dichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,3,5-Trimethylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	1,3-Dichlorobenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	2-Butanone (MEK)	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Acetone	0.0420	0.120	0.120 J		mg/kg	I
PR79-WT-014-SD-01	N	Benzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Bromodichloromethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Bromomethane	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Carbon disulfide	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Chloroethane	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Chloroform	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Chloromethane	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	cis-1,2-Dichloroethene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Dibromochloromethane	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Ethylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Isopropylbenzene (Cumene)	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	m,p-Xylene	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Methylene chloride	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	n-Butylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	n-Propylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	o-Xylene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	sec-Butylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	tert-Butyl alcohol	0.0420	0.0210 U	0.0210 UJ		mg/kg	I
PR79-WT-014-SD-01	N	tert-Butylbenzene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Toluene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	trans-1,2-Dichloroethene	0.00850	0.00420 U	0.00420 UJ		mg/kg	I
PR79-WT-014-SD-01	N	Trichloroethene (TCE)	0.00850	0.00420 U	0.00420 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-014-SD-01	N	Vinyl chloride	0.0170	0.00850 U	0.00850 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,1,1-Trichloroethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,1-Dichloroethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,1-Dichloroethene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2,3-Trichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2,4-Trichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2,4-Trimethylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,2-Dichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,3,5-Trimethylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	1,3-Dichlorobenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	2-Butanone (MEK)	0.0600	0.0430 J	0.0430 J		mg/kg	I/TR
PR79-WT-018-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0600	0.0300 U	0.0300 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Acetone	0.0600	0.360	0.360 J		mg/kg	I
PR79-WT-018-SD-01	N	Benzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Bromodichloromethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Bromomethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Carbon disulfide	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Chloroethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Chloroform	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Chloromethane	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	cis-1,2-Dichloroethene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Dibromochloromethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Ethylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Isopropylbenzene (Cumene)	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	m,p-Xylene	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Methylene chloride	0.0600	0.0300 U	0.0300 UJ		mg/kg	I
PR79-WT-018-SD-01	N	n-Butylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	n-Propylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	o-Xylene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	sec-Butylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	tert-Butyl alcohol	0.0600	0.0300 U	0.0300 UJ		mg/kg	I
PR79-WT-018-SD-01	N	tert-Butylbenzene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Toluene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	trans-1,2-Dichloroethene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Trichloroethene (TCE)	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-018-SD-01	N	Vinyl chloride	0.0240	0.0120 U	0.0120 UJ		mg/kg	I
PR79-WT-019-SD-01	N	Methylene chloride	0.0280	0.00980 J	0.0140 U		mg/kg	T
PR79-WT-020-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,1-Dichloroethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-020-SD-01	N	1,1-Dichloroethene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	2-Butanone (MEK)	0.0520	0.170	0.170 J		mg/kg	I
PR79-WT-020-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0520	0.0260 U	0.0260 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Acetone	0.0520	0.520	0.520 J		mg/kg	I
PR79-WT-020-SD-01	N	Benzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Bromodichloromethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Bromomethane	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Carbon disulfide	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Chloroethane	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Chloroform	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Chloromethane	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Dibromochloromethane	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Ethylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	m,p-Xylene	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	n-Butylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	n-Propylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	o-Xylene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	sec-Butylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	tert-Butyl alcohol	0.0520	0.0260 U	0.0260 UJ		mg/kg	I
PR79-WT-020-SD-01	N	tert-Butylbenzene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Toluene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Trichloroethene (TCE)	0.0100	0.00520 U	0.00520 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Vinyl chloride	0.0210	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-020-SD-01	N	Methylene chloride	0.0520	0.0190 J	0.0260 UJ		mg/kg	T/I

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD01-01	FD	pH	0.100	5.20	5.20 J	-	ph units	H2
PR79-WT-014-SD-01	N	pH	0.100	6.60	6.60 J	-	ph units	H2
PR79-WT-015-SD-01	N	pH	0.100	6.80	6.80 J	-	ph units	H2
PR79-WT-018-SD-01	N	pH	0.100	5.20	5.20 J	-	ph units	H2

Table of All Qualified Results

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-019-SD-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2
PR79-WT-020-SD-01	N	pH	0.100	6.00	6.00 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-020-PW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-020-PW-01	N	2-Methylnaphthalene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Acenaphthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Acenaphthylene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Anthracene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Benzo(a)anthracene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Benzo(a)pyrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Benzo(b)fluoranthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Benzo(k)fluoranthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Chrysene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Fluoranthene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Fluorene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Naphthalene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Pentachlorophenol	0.970	0.480 U	0.480 UJ	0.480 U	
PR79-WT-020-PW-01	N	Phenanthrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	
PR79-WT-020-PW-01	N	Pyrene	0.190	0.0970 U	0.0970 UJ	0.0970 U	

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SD-FD01-01	FD	1,4-Dioxane (p-Dioxane)	0.240	0.120 UL	0.120 X	0.120 UJ	C
PR79-WT-019-SD-01	N	Benzo(a)anthracene	0.0230	0.0110 UL	0.0110 X	0.0110 UJ	C
PR79-WT-019-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0110 UL	0.0110 X	0.0110 UJ	C

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD01-01-F	FD	Potassium	1000	766 J	766 J	1000 U	L
PR79-SW-FD01-01-F	FD	Potassium	1000	808 J	808 J	1000 U	L
PR79-WT-014-PW-01-F	N	Iron	100	31.0 J	31.0 J	80.0 U	L
PR79-WT-015-SW-01-F	N	Iron	100	66.2 J	66.2 J	80.0 U	L
PR79-WT-015-SW-01-F	N	Potassium	1000	963 J	963 J	1000 U	L
PR79-WT-018-PW-01-F	N	Potassium	1000	800 J	800 J	1000 U	L
PR79-WT-018-SW-01-F	N	Potassium	1000	870 J	870 J	1000 U	L
PR79-WT-019-PW-01-F	N	Calcium	100	8740	8740 J	8740	
PR79-WT-019-SW-01-F	N	Potassium	1000	701 J	701 J	1000 U	L
PR79-WT-020-PW-01-F	N	Aluminum	300	263 J	263 J	300 U	L
PR79-WT-020-PW-01-F	N	Vanadium	10.0	1.50 J	1.50 J	4.00 U	L
PR79-WT-020-PW-01-F	N	Zinc	20.0	3.00 J	3.00 J	10.0 U	L
PR79-WT-020-SW-01-F	N	Aluminum	300	181 J	181 J	300 U	L
PR79-WT-020-SW-01-F	N	Iron	100	84.2 J	84.2 J	100 U	L

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-020-SW-01-F	N	Potassium	1000	804 J	804 J	1000 U	L
PR79-WT-020-SW-01-F	N	Vanadium	10.0	0.280 J	0.280 J	4.00 U	L
PR79-WT-020-SW-01-F	N	Zinc	20.0	2.50 J	2.50 J	10.0 U	L

Modified Qualifiers for test method SW6020A, Dissolved							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-020-PW-01-F	N	Cobalt	1.00	0.708 J	0.708 J	1.00	
PR79-WT-020-SW-01-F	N	Beryllium	1.00	0.0620 J	0.0620 J	0.200 U	L
PR79-WT-020-SW-01-F	N	Cobalt	1.00	0.170 J	0.170 J	0.300	

Modified Qualifiers for test method SW8260C							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-019-SD-01	N	Methylene chloride	0.0280	0.00980 J	0.00980 J	0.0140 U	T
PR79-WT-020-SD-01	N	Methylene chloride	0.0520	0.0190 J	0.0190 J	0.0260 UJ	T/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D3	Field Duplicate RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?			•	
Were LCS/LCSD recoveries within project acceptance limits?			•	
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-WT-018-PW-01 / PR79-PW-FD01-01 38.9%. Qualify J.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			HT flags and action removed for -33 - OK.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report - no action required.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		associated sample results ND - no action.
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report. X changed from samples for recovery < lower limit but above 10% - to UJ.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		19 analytes in 2 SW3520 samples did not meet the requested RLs. 39 analytes in 6 SW3550 samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: Low IS PR79-WT-014-SD-01, PR79-WT-015-SD-01 - assoc pos results may be biased high. CCV high for chrysene - pos results in PR79-WT-014-SW-01, PR79-WT-020-SW-01 may be biased high. CCVs outside 12h tune - no quals. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			Filtered samples were manually qualified. See Modified Qualifier results table.
Were target analytes in the method blank less than MDL?		•		see outlier report
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report - no action The outlier report for 019-PW MS shows low % recovery for Ca but the data package has acceptable %Recovery. The result is not qualified in the database.
Was the MS/MSD RPD within project acceptance limits?	•			PW-F only for MSD/RPDs
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		see outlier report.
Were QAPP specified laboratory PQLs achieved?		•		3 analytes in 3 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			Filtered samples were manually qualified. See Modified Qualifier results table.
Were target analytes in the method blank less than MDL?		•		see ADR report
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		see outlier report
Were QAPP specified laboratory PQLs achieved?		•		15 analytes in 5 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB02-SD-01 -methylene chloride 0.019J
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			LCS only.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		53 analytes in 6 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV low for ClMeth - assoc ND results in PR79-WT-015-SD-01, PR79-WT-019-SD-01, PR79-WT-020-SD-01, PR79-SD-FD01-01 biased low. CCV high for acetone - assoc results PR79-WT-020-SD-01, PR79-SD-FD01-01 may be biased high. Low IS PR79-WT-014-SD-01 - assoc result for acetone may be biased high; Low IS PR79-WT-018-SD-01, PR79-WT-020-SD-01 and PR79-SD-FD01-01 - assoc results for acetone and MEK may be biased high. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformance.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?		•		all past 24 hour HT - qualify J
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.2, 0.7, 0.4, 0.9C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		2 analytes in 2 samples did not meet the requested RLs
Were any data rejected during the verification process?		•		

Data Validation Report for SN3499

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring Soil
SDG:	SN3499
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	SW6010C	SW6010C/SW1312	SW6020A	SW7471B	SW8260C	SW9045D	SW9060A
PR79-SB-108-AS-01	SN3499-1	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-108-AS-01	SN3499-10	Solid	Field Sample/N			X					
PR79-SB-108-BS-01	SN3499-11	Solid	Field Sample/N			X					
PR79-SB-108-BS-01	SN3499-2	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-109-AS-01	SN3499-12	Solid	Field Sample/N			X					
PR79-SB-109-AS-01	SN3499-3	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-109-BS-01	SN3499-13	Solid	Field Sample/N			X					
PR79-SB-109-BS-01	SN3499-4	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-110-AS-01	SN3499-14	Solid	Field Sample/N			X					
PR79-SB-110-AS-01	SN3499-5	Solid	Field Sample/N	X	X		X	X		X	X
PR79-SB-110-BS-01	SN3499-15	Solid	Field Sample/N			X					
PR79-SB-110-BS-01	SN3499-6	Solid	Field Sample/N	X	X		X	X	X		
PR79-SB-FD01-01	SN3499-16	Solid	Field Duplicate/FD			X					
PR79-SB-FD01-01	SN3499-7	Solid	Field Duplicate/FD	X	X		X	X		X	X
PR79-SB-FD02-01	SN3499-17	Solid	Field Duplicate/FD			X					
PR79-SB-FD02-01	SN3499-8	Solid	Field Duplicate/FD	X	X		X	X	X		
EB-02-SOBG-01	SN3499-9	Water	Equipment Blank/EB						X		

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3499. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Equipment Blank

Extracted Internal Standard

Field Duplicate RPD

Lab Blank

LCS Recovery

LCS RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 62 results (11.48%) out of the 540 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

SPLP Metals validated to Stage 2B, all other parameters Stage 2A

Analytical Method	Data Reviewer Comment
BNASIM	Only elements of Stage 2A review were addressed; others NA.
SW6010C	SPLP Metals validated to Stage 2B, other metals Stage 2A
SW6020A	6020 Metals Stage 2A
SW7471B	Mercury Stage 2A
SW8260C	Only elements of Stage 2A review were addressed; others NA.
SW9045D	Only elements of Stage 2A review were addressed; others NA.
SW9060A	Only elements of Stage 2A review were addressed; others NA.

Kristin Rutherford

September 04, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277372-1 (LB)/ WG277372-1	Dibenz (a,h)anthracene	0.009800	< 0.0018	< 0.02	mg/kg	U/None	L	
WG277372-1 (LB)/ WG277372-1	Indeno(1,2,3-c,d)pyrene	0.01200	< 0.0019	< 0.02	mg/kg	U/None	L	
WG277372-1 (LB)/ WG277372-1	Benzo (g,h,i)perylene	0.01300	< 0.002	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Benzo(g,h,i)perylene	0.0220	0.00680 JB	0.0110 U		mg/kg	L
PR79-SB-108-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.00320 J	0.0110 U		mg/kg	L
PR79-SB-108-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0220	0.00470 JB	0.0110 U		mg/kg	L
PR79-SB-109-AS-01	N	Dibenz(a,h)anthracene	0.0210	0.0360	0.0360 J	+	mg/kg	L
PR79-SB-110-AS-01	N	Benzo(g,h,i)perylene	0.0180	0.00250 JB	0.00920 U		mg/kg	L
PR79-SB-110-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0180	0.00200 JB	0.00920 U		mg/kg	L
PR79-SB-FD01-01	FD	Benzo(g,h,i)perylene	0.0200	0.00330 JB	0.0100 U		mg/kg	L
PR79-SB-FD01-01	FD	Indeno(1,2,3-c,d)pyrene	0.0200	0.00220 JB	0.0100 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277372-2 (BS)/ WG277372-2	1,4-Dioxane (p-Dioxane)	21.74	30 - 150	10 - 150	percent	J/UJ	C	
WG277372-2 (BS)/ WG277372-2	Benzo (b)fluoranthene	52.47	53 - 128	10 - 128	percent	J/UJ	C	
WG277372-2 (BS)/ WG277372-2	Benzo (a)anthracene	52.62	54 - 122	10 - 122	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 UL	0.0550 UJ		mg/kg	C
PR79-SB-108-AS-01	N	Benzo(a)anthracene	0.0220	0.00230 JL	0.00230 J	-	mg/kg	C/TR
PR79-SB-108-AS-01	N	Benzo(b)fluoranthene	0.0220	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-SB-108-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0990	0.0490 UL	0.0490 UJ		mg/kg	C
PR79-SB-108-BS-01	N	Benzo(a)anthracene	0.0200	0.00990 UL	0.00990 UJ		mg/kg	C
PR79-SB-108-BS-01	N	Benzo(b)fluoranthene	0.0200	0.00990 UL	0.00990 UJ		mg/kg	C
PR79-SB-109-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0530 UL	0.0530 UJ		mg/kg	C
PR79-SB-109-AS-01	N	Benzo(a)anthracene	0.0210	0.230 L	0.230 J	-	mg/kg	C
PR79-SB-109-AS-01	N	Benzo(b)fluoranthene	0.0210	0.200 L	0.200 J	-	mg/kg	C
PR79-SB-109-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0930	0.0470 UL	0.0470 UJ		mg/kg	C
PR79-SB-109-BS-01	N	Benzo(a)anthracene	0.0190	0.00930 UL	0.00930 UJ		mg/kg	C
PR79-SB-109-BS-01	N	Benzo(b)fluoranthene	0.0190	0.00930 UL	0.00930 UJ		mg/kg	C
PR79-SB-110-AS-01	N	1,4-Dioxane (p-Dioxane)	0.0920	0.0460 UL	0.0460 UJ		mg/kg	C
PR79-SB-110-AS-01	N	Benzo(a)anthracene	0.0180	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-110-AS-01	N	Benzo(b)fluoranthene	0.0180	0.00280 JL	0.00280 J	-	mg/kg	C/TR
PR79-SB-110-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0960	0.00140 JL	0.00140 J	-	mg/kg	C/TR
PR79-SB-110-BS-01	N	Benzo(a)anthracene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-110-BS-01	N	Benzo(b)fluoranthene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-FD01-01	FD	1,4-Dioxane (p-Dioxane)	0.100	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-FD01-01	FD	Benzo(a)anthracene	0.0200	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-FD01-01	FD	Benzo(b)fluoranthene	0.0200	0.00320 JL	0.00320 J	-	mg/kg	C/TR
PR79-SB-FD02-01	FD	1,4-Dioxane (p-Dioxane)	0.0980	0.00130 JL	0.00130 J	-	mg/kg	C/TR
PR79-SB-FD02-01	FD	Benzo(a)anthracene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C
PR79-SB-FD02-01	FD	Benzo(b)fluoranthene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C SW1312, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-109-BS-01 (SD)/ SN3499-013P	Lead	80.50	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-109-BS-01 (SD)/ SN3499-013P	Thallium	83.50	85 - 114	30 - 125	percent	J/UJ	M	
PR79-SB-109-BS-01 (MS)/ SN3499-013S	Lead	73.00	86 - 113	30 - 125	percent	J/UJ	M	
PR79-SB-109-BS-01 (MS)/ SN3499-013S	Thallium	77.50	85 - 114	30 - 125	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6010C SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-109-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-109-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C SW1312, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-108-AS-01 (N)/ SN3499-10		34.83	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-108-BS-01 (N)/ SN3499-11		34.82	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-109-AS-01 (N)/ SN3499-12		40.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-109-BS-01 (N)/ SN3499-013P		40.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-109-BS-01 (N)/ SN3499-013S		40.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-109-BS-01 (N)/ SN3499-13		40.88	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-110-AS-01 (N)/ SN3499-14		40.94	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-110-BS-01 (N)/ SN3499-15		40.94	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-FD01-01 (FD)/ SN3499-16		40.80	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL
PR79-SB-FD02-01 (FD)/ SN3499-17		40.79	< 0	< 0	days	J/X	H1	Sampling to Leach Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICB INF18A (CB)	Chromium	0.2500	4 - 0	0.36 - 0	ug/l	None/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Calibration Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-110-BS-01	N	Chromium	20.0	15.0 J	20.0 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-108-AS-01 (N)/ SN3499-7	Calcium	50.88	< 50	< 50	rpd	J/None	D3	
PR79-SB-108-BS-01 (N)/ SN3499-8	Lead	1.790	< 0.49	< 0.49	mg/kg	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Calcium	9.90	2860	2860 J		mg/kg	D3
PR79-SB-108-BS-01	N	Lead	0.490	1.78	1.78 J		mg/kg	D3
PR79-SB-FD01-01	FD	Calcium	9.90	1700	1700 J		mg/kg	D3
PR79-SB-FD02-01	FD	Lead	0.530	3.57	3.57 J		mg/kg	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Silver	0.04800	< 0.027	< 1	mg/kg	U/None	L	
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Aluminum	0.8500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE11ICS1 (LB)/ PBSNE11ICS1	Sodium	5.500	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Silver	0.990	0.498 J	0.990 U		mg/kg	L
PR79-SB-108-AS-01	N	Sodium	99.0	89.2 J	99.0 U		mg/kg	L
PR79-SB-108-BS-01	N	Silver	0.980	0.527 J	0.980 U		mg/kg	L
PR79-SB-109-AS-01	N	Silver	1.00	0.640 J	1.00 U		mg/kg	L
PR79-SB-109-AS-01	N	Sodium	100	40.8 J	53.0 U		mg/kg	L
PR79-SB-109-BS-01	N	Silver	1.00	0.586 J	1.00 U		mg/kg	L
PR79-SB-110-AS-01	N	Silver	1.10	0.407 J	0.430 U		mg/kg	L
PR79-SB-110-AS-01	N	Sodium	110	98.6 J	110 U		mg/kg	L
PR79-SB-110-BS-01	N	Silver	1.00	0.782 J	1.00 U		mg/kg	L
PR79-SB-FD01-01	FD	Silver	0.990	0.514 J	0.990 U		mg/kg	L
PR79-SB-FD01-01	FD	Sodium	99.0	80.0 J	99.0 U		mg/kg	L
PR79-SB-FD02-01	FD	Silver	1.10	0.633 J	1.10 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE11IMS1 (LB)/ PBSNE11IMS1	Beryllium	0.009800	< 0.0041	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-109-BS-01 (N)/ SN3499-4	Dibromofluoromethane	126.0	78 - 119	10 - 119	percent	J/None	I	
PR79-SB-FD02-01 (FD)/ SN3499-8	Dibromofluoromethane	122.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-109-BS-01	N	Acetone	0.0210	0.0180 J	0.0180 J	+	mg/kg	I/TR
PR79-SB-109-BS-01	N	Methylene chloride	0.0210	0.0120 J	0.0120 J	+	mg/kg	I/TR
PR79-SB-FD02-01	FD	Acetone	0.0180	0.0120 J	0.0120 J	+	mg/kg	I/TR
PR79-SB-FD02-01	FD	Methylene chloride	0.0180	0.0130 J	0.0130 J	+	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-109-BS-01 (STD)	1,2-Dichloroethane-d4	140.0	71 - 136	10 - 136	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-108-AS-01 (N)/ SN3499-1		44.75	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-109-AS-01 (N)/ SN3499-3		46.50	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-110-AS-01 (N)/ SN3499-5		48.00	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-SB-FD01-01 (FD)/ SN3499-7		44.67	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	pH	0.100	7.30	7.30 J	-	ph units	H2
PR79-SB-109-AS-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2
PR79-SB-110-AS-01	N	pH	0.100	6.90	6.90 J	-	ph units	H2
PR79-SB-FD01-01	FD	pH	0.100	7.40	7.40 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SB-108-AS-01 (N)/ SN3499-7	Total Organic Carbon	71.19	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Total Organic Carbon	560	5700	5700 J		ug/g	D3
PR79-SB-FD01-01	FD	Total Organic Carbon	570	12000	12000 J		ug/g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Benzo(g,h,i)perylene	0.0220	0.00680 JB	0.0110 U		mg/kg	L
PR79-SB-108-AS-01	N	Dibenz(a,h)anthracene	0.0220	0.00320 J	0.0110 U		mg/kg	L
PR79-SB-108-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0220	0.00470 JB	0.0110 U		mg/kg	L
PR79-SB-108-AS-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.0550 UL	0.0550 UJ		mg/kg	C
PR79-SB-108-AS-01	N	Benzo(a)anthracene	0.0220	0.00230 JL	0.00230 J	-	mg/kg	C/TR
PR79-SB-108-AS-01	N	Benzo(b)fluoranthene	0.0220	0.0110 UL	0.0110 UJ		mg/kg	C
PR79-SB-108-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0990	0.0490 UL	0.0490 UJ		mg/kg	C
PR79-SB-108-BS-01	N	Benzo(a)anthracene	0.0200	0.00990 UL	0.00990 UJ		mg/kg	C
PR79-SB-108-BS-01	N	Benzo(b)fluoranthene	0.0200	0.00990 UL	0.00990 UJ		mg/kg	C
PR79-SB-109-AS-01	N	Dibenz(a,h)anthracene	0.0210	0.0360	0.0360 J	+	mg/kg	L
PR79-SB-109-AS-01	N	1,4-Dioxane (p-Dioxane)	0.100	0.0530 UL	0.0530 UJ		mg/kg	C
PR79-SB-109-AS-01	N	Benzo(a)anthracene	0.0210	0.230 L	0.230 J	-	mg/kg	C
PR79-SB-109-AS-01	N	Benzo(b)fluoranthene	0.0210	0.200 L	0.200 J	-	mg/kg	C
PR79-SB-109-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0930	0.0470 UL	0.0470 UJ		mg/kg	C
PR79-SB-109-BS-01	N	Benzo(a)anthracene	0.0190	0.00930 UL	0.00930 UJ		mg/kg	C
PR79-SB-109-BS-01	N	Benzo(b)fluoranthene	0.0190	0.00930 UL	0.00930 UJ		mg/kg	C
PR79-SB-110-AS-01	N	Benzo(g,h,i)perylene	0.0180	0.00250 JB	0.00920 U		mg/kg	L
PR79-SB-110-AS-01	N	Indeno(1,2,3-c,d)pyrene	0.0180	0.00200 JB	0.00920 U		mg/kg	L
PR79-SB-110-AS-01	N	1,4-Dioxane (p-Dioxane)	0.0920	0.0460 UL	0.0460 UJ		mg/kg	C
PR79-SB-110-AS-01	N	Benzo(a)anthracene	0.0180	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-110-AS-01	N	Benzo(b)fluoranthene	0.0180	0.00280 JL	0.00280 J	-	mg/kg	C/TR
PR79-SB-110-BS-01	N	1,4-Dioxane (p-Dioxane)	0.0960	0.00140 JL	0.00140 J	-	mg/kg	C/TR
PR79-SB-110-BS-01	N	Benzo(a)anthracene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-110-BS-01	N	Benzo(b)fluoranthene	0.0190	0.00960 UL	0.00960 UJ		mg/kg	C
PR79-SB-FD01-01	FD	Benzo(g,h,i)perylene	0.0200	0.00330 JB	0.0100 U		mg/kg	L
PR79-SB-FD01-01	FD	Indeno(1,2,3-c,d)pyrene	0.0200	0.00220 JB	0.0100 U		mg/kg	L
PR79-SB-FD01-01	FD	1,4-Dioxane (p-Dioxane)	0.100	0.0500 UL	0.0500 UJ		mg/kg	C
PR79-SB-FD01-01	FD	Benzo(a)anthracene	0.0200	0.00200 JL	0.00200 J	-	mg/kg	C/TR
PR79-SB-FD01-01	FD	Benzo(b)fluoranthene	0.0200	0.00320 JL	0.00320 J	-	mg/kg	C/TR
PR79-SB-FD02-01	FD	1,4-Dioxane (p-Dioxane)	0.0980	0.00130 JL	0.00130 J	-	mg/kg	C/TR
PR79-SB-FD02-01	FD	Benzo(a)anthracene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C
PR79-SB-FD02-01	FD	Benzo(b)fluoranthene	0.0200	0.00980 UL	0.00980 UJ		mg/kg	C

Test Method: SW6010C Extraction Method: SW3010A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-109-BS-01	N	Lead	25.0	20.0 UN	20.0 UJ		ug/l	M
PR79-SB-109-BS-01	N	Thallium	75.0	25.0 UN	25.0 UJ		ug/l	M
PR79-SB-110-BS-01	N	Chromium	20.0	15.0 J	20.0 U		ug/l	B2

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Silver	0.990	0.498 J	0.990 U		mg/kg	L
PR79-SB-108-AS-01	N	Sodium	99.0	89.2 J	99.0 U		mg/kg	L
PR79-SB-108-AS-01	N	Calcium	9.90	2860	2860 J		mg/kg	D3
PR79-SB-108-BS-01	N	Silver	0.980	0.527 J	0.980 U		mg/kg	L
PR79-SB-108-BS-01	N	Lead	0.490	1.78	1.78 J		mg/kg	D3
PR79-SB-109-AS-01	N	Silver	1.00	0.640 J	1.00 U		mg/kg	L
PR79-SB-109-AS-01	N	Sodium	100	40.8 J	53.0 U		mg/kg	L
PR79-SB-109-BS-01	N	Silver	1.00	0.586 J	1.00 U		mg/kg	L
PR79-SB-110-AS-01	N	Silver	1.10	0.407 J	0.430 U		mg/kg	L
PR79-SB-110-AS-01	N	Sodium	110	98.6 J	110 U		mg/kg	L
PR79-SB-110-BS-01	N	Silver	1.00	0.782 J	1.00 U		mg/kg	L
PR79-SB-FD01-01	FD	Silver	0.990	0.514 J	0.990 U		mg/kg	L
PR79-SB-FD01-01	FD	Sodium	99.0	80.0 J	99.0 U		mg/kg	L
PR79-SB-FD01-01	FD	Calcium	9.90	1700	1700 J		mg/kg	D3
PR79-SB-FD02-01	FD	Silver	1.10	0.633 J	1.10 U		mg/kg	L
PR79-SB-FD02-01	FD	Lead	0.530	3.57	3.57 J		mg/kg	D3

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-109-BS-01	N	Acetone	0.0210	0.0180 J	0.0180 J	+	mg/kg	I/TR
PR79-SB-109-BS-01	N	Methylene chloride	0.0210	0.0120 J	0.0120 J	+	mg/kg	I/TR
PR79-SB-FD02-01	FD	Acetone	0.0180	0.0120 J	0.0120 J	+	mg/kg	I/TR
PR79-SB-FD02-01	FD	Methylene chloride	0.0180	0.0130 J	0.0130 J	+	mg/kg	I/TR

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	pH	0.100	7.30	7.30 J	-	ph units	H2
PR79-SB-109-AS-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2
PR79-SB-110-AS-01	N	pH	0.100	6.90	6.90 J	-	ph units	H2
PR79-SB-FD01-01	FD	pH	0.100	7.40	7.40 J	-	ph units	H2

Test Method: SW9060A Extraction Method: NONE

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SB-108-AS-01	N	Total Organic Carbon	560	5700	5700 J		ug/g	D3
PR79-SB-FD01-01	FD	Total Organic Carbon	570	12000	12000 J		ug/g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C SW1312

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SB-108-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-108-AS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-108-BS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-108-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-109-AS-01	N	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-109-AS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-109-BS-01	N	Lead	25.0	20.0 UN	20.0 X	20.0 UJ	M
PR79-SB-109-BS-01	N	Thallium	75.0	25.0 UN	25.0 X	25.0 UJ	M
PR79-SB-110-AS-01	N	Lead	25.0	6.40 J	6.40 J	6.40 J	TR
PR79-SB-110-BS-01	N	Chromium	20.0	15.0 J	15.0 J	20.0 U	B2
PR79-SB-110-BS-01	N	Lead	25.0	7.60 J	7.60 J	7.60 J	TR
PR79-SB-110-BS-01	N	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-FD01-01	FD	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-FD01-01	FD	Thallium	75.0	25.0 U	25.0 X	25.0 U	
PR79-SB-FD02-01	FD	Lead	25.0	20.0 U	20.0 X	20.0 U	
PR79-SB-FD02-01	FD	Thallium	75.0	25.0 U	25.0 X	25.0 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
D3	Field Duplicate RPD
H1	Test Hold Time
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?			•	
Was instrument tuning completed every 12 hours during sample analysis?			•	
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were Internal Standard retention times and area criteria within method requirements?			•	
Were internal standards spiked for every sample, standard, and QC sample?			•	
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report for 3 BNA cmpds: 2 <LOQ, 1 <LOD
Were target analytes in the field blank less than MDL?			•	EB not submitted for BNA analysis
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report: 3 below %R criteria
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD in this batch
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-108-AS-01 / PR79-SB-FD01-01 PR79-SB-108-BS-01 / PR79-SB-FD02-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3499

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		SPLP samples -10 thru -17 were logged in and analyzed for SPLP Pb, Cr, and/or Tl.
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			Note: SPLP ND results were rejected due to incorrect control limits. Holding times met criteria for SPLP and quals were manually changed by validator.
Were all requested target analytes reported?	•			SPLP metals per sample as requested
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			ICB/CCBs some contamination <LOQ and some negative values. No quals required since assoc results were >LOQ and >5X blank or >LOQ and >5X neg drift
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were ICB/CCBs run at the required frequency and within acceptance criteria?		•		CCBs assoc with SPLP samples: Pb, Cr <LOQ. Pn in sample -14 U@LOD, Cr and Pb in sample -15 U@LOD. See outlier report.
Did the ICSA have any non-target interferents above the MDL?		•		ICSA criteria not specified in QAPP; meets DoD QSM criteria
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBSNE11ICS1 SOIL Al, Ag, Na. See outlier report.
Were target analytes in the field blank less than MDL?			•	FB not analyzed for metals
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			MS/MSD for SPLP only PR79-SB-109-BS-01 (SN3499-013)
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report - SPLP Pb, Tl below %R criteria, PDS ok
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			SPLP only
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-SB-108-AS-01 / PR79-SB-FD01-01 SOIL Calcium; PR79-SB-108-BS-01 / PR79-SB-FD02-01 SOIL Pb; see outlier report
Were QAPP specified laboratory PQLs achieved?		•		SW6010C/SW3050B:1 analyte in 1 sample did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			

Data Validation Report for SN3499

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3499

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the system properly tuned based on method criteria?			•	
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	
Did the ICSA have any non-target interferents above the MDL?			•	
Were the ICSA/ICSAB recoveries within QAPP acceptance limits?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBSNE11IMS1 SOIL Be, no actions. See outlier report.
Were target analytes in the field blank less than MDL?			•	FB not submitted for metals
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		SPLP 6010 only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		SW6020A/SW3050B: 9 analytes in 5 samples did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	FB not analyzed for metals
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		SPLP metals only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		SW7471B/METHOD: 3 analytes in 3 samples did not meet PAL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?			•	
Was instrument tuning completed every 12 hours during sample analysis?			•	
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were Internal Standard retention times and area criteria within method requirements?			•	
Were internal standards spiked for every sample, standard, and QC sample?			•	
Were surrogate recoveries within project acceptance limits?		•		See outlier report. Note surr 1,2-DICHLOROETHANE-D4 did not appear on outlier report for sample PR79-SB-109-BS-01. Added as outlier; positive results already qualified for surr DIBROMOFLUOROMETHANE in this sample.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			EB-02-SOBG-01 ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS/MSD analyzed with this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-108-BS-01 / PR79-SB-FD02-01 criteria met
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICV high for ClMeth and Carbon disulfide - assoc results ND. CCV high carbon disulfide - results ND. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		Case narrative notes ICV criteria were not met. Based on DoD no samples should be analyzed until cal has been verified.

Data Validation Report for SN3499

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Were any data rejected during the verification process?		•		

Data Validation Report for SN3499

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		outside of 24 hour HT, J results
Was the Calibration within acceptance criteria?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			PR79-SB-108-AS-01 / PR79-SB-FD01-01 criteria met
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			Note pH holding time was not addressed in case narrative.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?			•	
Were the required minimum levels of calibration standards used in the initial calibration?			•	
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?			•	
Were all reported analytes for the ICV within the required criteria?			•	
Were CCVs run at the required frequency and within acceptance criteria?			•	
Were ICB/CCBs run at the required frequency and within acceptance criteria?			•	not assessed for 2A
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	EB not analyzed for TOC
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		PR79-SB-108-AS-01 / PR79-SB-FD01-01 RPD outside criteria, see outlier report
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3551

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3551
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-004-PW-01	SN3551-10		Field Sample/N	X		X	X		X		X			X		
PR79-WT-004-PW-01-F	SN3551-11		Field Sample/N					X		X		X				
PR79-WT-004-SD-01	SN3551-12	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-004-SD-01	SN3551-13	Solid	Field Sample/N		X		X									
TB-03-SD-01	SN3551-9	Solid	Trip Blank/TB											X		
PW-EB-01-01	SN3551-1	Water	Equipment Blank/EB	X		X	X		X		X			X		
PW-EB-01-01-F	SN3551-2	Water	Equipment Blank/EB					X		X		X				
SD-EB-01-01	SN3551-7	Water	Equipment Blank/EB											X		
SW-EB-01-01	SN3551-5	Water	Equipment Blank/EB	X		X	X		X		X			X		
SW-EB-01-01-F	SN3551-6	Water	Equipment Blank/EB					X		X		X				
TB-03-SW-01	SN3551-8	Water	Trip Blank/TB											X		

Data Validation Report for SN3551

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-004-PW-01	SN3551-10		Field Sample/N	X
PR79-WT-004-PW-01-F	SN3551-11		Field Sample/N	
PR79-WT-004-SD-01	SN3551-12	Solid	Field Sample/N	
PR79-WT-004-SD-01	SN3551-13	Solid	Field Sample/N	
TB-03-SD-01	SN3551-9	Solid	Trip Blank/TB	
PW-EB-01-01	SN3551-1	Water	Equipment Blank/EB	X
PW-EB-01-01-F	SN3551-2	Water	Equipment Blank/EB	
SD-EB-01-01	SN3551-7	Water	Equipment Blank/EB	
SW-EB-01-01	SN3551-5	Water	Equipment Blank/EB	X
SW-EB-01-01-F	SN3551-6	Water	Equipment Blank/EB	
TB-03-SW-01	SN3551-8	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3551. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Equipment Blank

Extracted Internal Standard

Lab Blank

LCS Recovery

LCS RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 15 results (2.86%) out of the 525 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	% solids - ok
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	Full scan and SIM. % solids - OK. Container History reviewed for VOC SE samples - frozen before 48 hours -OK.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

Reviewed by Kristin Rutherford, Chemist, AECOM — July 22, 2020

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM — April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277373-2 (BS)/ WG277373-2	Pyrene	139.1	55 - 117	10 - 117	percent	J/None	C	
WG277373-2 (BS)/ WG277373-2	Phenanthrene	167.9	49 - 113	10 - 113	percent	J/None	C	
WG277373-2 (BS)/ WG277373-2	Fluoranthene	173.9	55 - 119	10 - 119	percent	J/None	C	
WG277373-2 (BS)/ WG277373-2	1,4-Dioxane (p-Dioxane)	29.24	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.00150 JL	0.00150 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-004-PW-01 (N)/ SN3551-10		14.17	< 14	< 28	days	J/UJ	H2	Prep to Test Exceeds UWL
SW-EB-01-01 (EB)/ SN3551-5		14.14	< 14	< 28	days	J/UJ	H2	Prep to Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PW-EB-01-01-F (EB)/ SN3551-2	Sodium	200.0	< 24	< 1000	ug/l	U/None	V	
PW-EB-01-01-F (EB)/ SN3551-2	Magnesium	21.00	< 7.8	< 100	ug/l	U/None	V	
PW-EB-01-01-F (EB)/ SN3551-2	Calcium	42.00	< 11	< 100	ug/l	U/None	V	
PW-EB-01-01-F (EB)/ SN3551-2	Iron	8.400	< 5.4	< 100	ug/l	U/None	V	
SW-EB-01-01-F (EB)/ SN3551-6	Zinc	1.100	< 0.72	< 20	ug/l	U/None	V	
SW-EB-01-01-F (EB)/ SN3551-6	Calcium	114.0	< 11	< 100	ug/l	U/None	V	
SW-EB-01-01-F (EB)/ SN3551-6	Magnesium	25.00	< 7.8	< 100	ug/l	U/None	V	
SW-EB-01-01-F (EB)/ SN3551-6	Sodium	395.0	< 24	< 1000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE11ICW3 (LB)	Magnesium	16.00	< 7.8	< 100	ug/l	None/U	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PW-EB-01-01-F	EB	Magnesium	100	21.0 J	80.0 U		ug/l	L
SW-EB-01-01-F	EB	Magnesium	100	25.0 J	80.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Zinc	0.2900	< 0.17	< 2	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Aluminum	1.500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Magnesium	1.900	< 0.68	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Iron	1.900	< 1.4	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Potassium	40.70	< 2.9	< 100	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Sodium	8.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	Sodium	78.0	35.8 J	39.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PW-EB-01-01 (EB)	Vanadium	0.2500	< 0.23	< 10	ug/l	None/U	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01	N	Vanadium	10.0	5.10 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PW-EB-01-01 (EB)/ SN3551-1	Zinc	0.7400	< 0.72	< 20	ug/l	U/None	V	
PW-EB-01-01 (EB)/ SN3551-1	Copper	1.000	< 0.63	< 25	ug/l	U/None	V	
PW-EB-01-01 (EB)/ SN3551-1	Magnesium	15.00	< 7.8	< 100	ug/l	U/None	V	
PW-EB-01-01 (EB)/ SN3551-1	Iron	7.300	< 5.4	< 100	ug/l	U/None	V	
SW-EB-01-01 (EB)/ SN3551-5	Barium	0.2900	< 0.23	< 5	ug/l	U/None	V	
SW-EB-01-01 (EB)/ SN3551-5	Copper	0.8200	< 0.63	< 25	ug/l	U/None	V	
SW-EB-01-01 (EB)/ SN3551-5	Calcium	100.0	< 11	< 100	ug/l	U/None	V	
SW-EB-01-01 (EB)/ SN3551-5	Magnesium	21.00	< 7.8	< 100	ug/l	U/None	V	
SW-EB-01-01 (EB)/ SN3551-5	Sodium	378.0	< 24	< 1000	ug/l	U/None	V	
SW-EB-01-01 (EB)/ SN3551-5	Iron	6.400	< 5.4	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE11ICW3 (LB)/ PBWNE11ICW3	Magnesium	16.00	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PW-EB-01-01	EB	Magnesium	100	15.0 J	80.0 U		ug/l	L
SW-EB-01-01	EB	Magnesium	100	21.0 J	80.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PW-EB-01-01-F (EB)/ SN3551-2	Nickel	0.1600	< 0.15	< 2	ug/l	U/None	V	
SW-EB-01-01-F (EB)/ SN3551-6	Nickel	0.2900	< 0.15	< 2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01-F	N	Nickel	2.00	0.500 J	1.20 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-004-PW-01-F (SD)/ SN3551-011P	Silver	116.8	85 - 116	30 - 125	percent	J/None	M	
PR79-WT-004-PW-01-F (SD)/ SN3551-011P	Cadmium	118.8	87 - 115	30 - 125	percent	J/None	M	
PR79-WT-004-PW-01-F (MS)/ SN3551-011S	Cadmium	116.4	87 - 115	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01-F	N	Cadmium	1.00	0.0440 JN	0.0440 J	+	ug/l	C/M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cadmium	0.02800	< 0.0076	< 0.1	mg/kg	U/None	L	
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cobalt	0.04600	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PW-EB-01-01 (EB)/ SN3551-1	Cadmium	0.03700	< 0.029	< 1	ug/l	U/None	V	
PW-EB-01-01 (EB)/ SN3551-1	Cobalt	0.06100	< 0.06	< 1	ug/l	U/None	V	
PW-EB-01-01 (EB)/ SN3551-1	Beryllium	0.06200	< 0.034	< 1	ug/l	U/None	V	
PW-EB-01-01 (EB)/ SN3551-1	Antimony	0.1600	< 0.055	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01	N	Beryllium	1.00	0.320 J	1.00 U		ug/l	V
PR79-WT-004-PW-01	N	Cadmium	1.00	0.0310 J	0.200 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSWNE11IMW3 (BS)/ LCSWNE11IMW3	Cadmium	117.2	87 - 115	40 - 150	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PW-EB-01-01	EB	Cadmium	1.00	0.0370 J	0.0370 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277634-1 (BS)/ WG277634-1	Bromomethane	160.0	53 - 143	10 - 143	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-004-SD-01 (N)/ SN3551-12	Dibromofluoromethane	156.0	78 - 119	10 - 119	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	Acetone	0.0240	0.0770	0.0770 J	+	mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-03-SD-01 (TB)/ SN3551-9	Methylene chloride	0.01400	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-004-SD-01 (N)/ SN3551-12		171.8	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: BNASIM	**Extraction Method: SW3550**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	1,4-Dioxane (p-Dioxane)	0.130	0.00150 JL	0.00150 J	-	mg/kg	C/TR

Test Method: SW6010C	**Extraction Method: Dissolved**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PW-EB-01-01-F	EB	Magnesium	100	21.0 J	80.0 U		ug/l	L
SW-EB-01-01-F	EB	Magnesium	100	25.0 J	80.0 U		ug/l	L

Test Method: SW6010C	**Extraction Method: SW3050B**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	Sodium	78.0	35.8 J	39.0 U		mg/kg	L

Test Method: SW6010C	**Extraction Method: Total**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01	N	Vanadium	10.0	5.10 J	10.0 U		ug/l	V
PR79-WT-004-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	V
PW-EB-01-01	EB	Magnesium	100	15.0 J	80.0 U		ug/l	L
SW-EB-01-01	EB	Magnesium	100	21.0 J	80.0 U		ug/l	L

Test Method: SW6020A	**Extraction Method: Dissolved**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01-F	N	Cadmium	1.00	0.0440 JN	0.0440 J	+	ug/l	C/M/TR
PR79-WT-004-PW-01-F	N	Nickel	2.00	0.500 J	1.20 U		ug/l	V

Test Method: SW6020A	**Extraction Method: Total**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-PW-01	N	Beryllium	1.00	0.320 J	1.00 U		ug/l	V
PR79-WT-004-PW-01	N	Cadmium	1.00	0.0310 J	0.200 U		ug/l	V
PW-EB-01-01	EB	Cadmium	1.00	0.0370 J	0.0370 J	+	ug/l	C/TR

Test Method: SW8260C	**Extraction Method: SW5035**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	Acetone	0.0240	0.0770	0.0770 J	+	mg/kg	I

Test Method: SW9045D	**Extraction Method: METHOD**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-004-SD-01	N	pH	0.100	6.70	6.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-004-PW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-004-PW-01	N	2-Methylnaphthalene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Acenaphthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Acenaphthylene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Benzo(a)anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Benzo(a)pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Benzo(b)fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Benzo(g,h,i)perylene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Benzo(k)fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Chrysene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Fluorene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Naphthalene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Pentachlorophenol	0.950	0.480 U	0.480 UJ	0.480 U	
PR79-WT-004-PW-01	N	Phenanthrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-004-PW-01	N	Pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
SW-EB-01-01	EB	1,4-Dioxane (p-Dioxane)	0.230	0.170 U	0.170 UJ	0.170 U	
SW-EB-01-01	EB	2-Methylnaphthalene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Acenaphthene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Acenaphthylene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Anthracene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Benzo(a)anthracene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Benzo(a)pyrene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Benzo(b)fluoranthene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Benzo(g,h,i)perylene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Benzo(k)fluoranthene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Chrysene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Dibenz(a,h)anthracene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Fluoranthene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Fluorene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Indeno(1,2,3-c,d)pyrene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Naphthalene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Pentachlorophenol	0.930	0.470 U	0.470 UJ	0.470 U	
SW-EB-01-01	EB	Phenanthrene	0.190	0.0930 U	0.0930 UJ	0.0930 U	
SW-EB-01-01	EB	Pyrene	0.190	0.0930 U	0.0930 UJ	0.0930 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PW-EB-01-01-F	EB	Magnesium	100	21.0 J	21.0 J	80.0 U	L
SW-EB-01-01-F	EB	Magnesium	100	25.0 J	25.0 J	80.0 U	L

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-004-PW-01	N	Copper	25.0	3.20 J	3.20 J	10.0 U	V
PR79-WT-004-PW-01	N	Vanadium	10.0	5.10 J	5.10 J	10.0 U	V

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-004-PW-01-F	N	Nickel	2.00	0.500 J	0.500 J	1.20 U	V

Modified Qualifiers for test method SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-004-PW-01	N	Beryllium	1.00	0.320 J	0.320 J	1.00 U	V
PR79-WT-004-PW-01	N	Cadmium	1.00	0.0310 J	0.0310 J	0.200 U	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?			•	
Were LCS/LCSD recoveries within project acceptance limits?			•	
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			Samples PR79-WT-004-PW-01 and SW-EB-01-01 were incorrectly qualified as being outside of HT. Qualifications were removed. EQAPP being revised.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		LCS - surrogate nonconformance - no action.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			PW-EB-01-01 - ND SW-EB-01-01 - ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?		•		WG277373-2 - see outlier report
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		Lab LOQs meet QAPP PQLs (SW, PW, SD) but not all meet Project Action Limits (as noted in QAPP). 5 analytes in 1 sample did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high for indeno(123cd)pyrene, pyrene - assoc results ND. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBSNE18ICS2: ALUMINUM 1.5 J IRON 1.9 J MAGNESIUM 1.9 J POTASSIUM 40.7 J SODIUM 8.9 J ZINC 0.29 J. PBWNE11ICW3: MAGNESIUM 16 J
Were target analytes in the field blank less than MDL?		•		PW-EB-01-01: COPPER, TOTAL, IRON, TOTAL, MAGNESIUM, TOTAL, VANADIUM, TOTAL, ZINC, TOTAL all J values. PW-EB-01-01-F: CALCIUM, DISSOLVED, IRON, DISSOLVED, MAGNESIUM, DISSOLVED, SODIUM, DISSOLVED all J values. SW-EB-01-01: BARIUM, TOTAL, COPPER, TOTAL, IRON, TOTAL, MAGNESIUM, TOTAL, SODIUM, TOTAL all J values, CALCIUM, TOTAL = 100 ug/L. SW-EB-01-01-F: CALCIUM, DISSOLVED = 114 ug/L, MAGNESIUM, DISSOLVED, SODIUM, DISSOLVED, ZINC, DISSOLVED all J values. Qualifications required.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			Sample PR79-WT-004-SD-01 was diluted 2x for a number of analytes. 1 analyte in 1 sample did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: ICSA above criteria for Mn; no quals would be required.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		PBSNE18IMS1: CADMIUM 0.028 J, COBALT 0.046 J.
Were target analytes in the field blank less than MDL?		•		PW-EB-01-01:,ANTIMONY TOTAL, BERYLLIUM, TOTAL, CADMIUM, TOTAL, COBALT, TOTAL, all J values. PW-EB-01-01-F: NICKEL, DISSOLVED, J value. SW-EB-01-01: ND SW-EB-01-01-F: NICKEL, DISSOLVED, J value. Qualifications required.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		All sample digestates were diluted 5X to reduce mass interferences from chlorine. 3 analytes in 3 FLDFLT samples did not meet the requested RLs. 1 analytes in 1 SW3050B sample did not meet the requested RLs. 3 analytes in 3 TOTAL samples did not meet the requested RLs.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3551

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		PR79-WT-004-SD-01, one surrogate out. Reanalyzed - OK. Original analysis reported.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			TB-03-SW-01 - ND PW-EB-01-01 - ND SW-EB-01-01 - ND
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?		•		Full scan: WG277634-1, Bromomethane 160% [53-143] - no action required.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?		•		LOQs meets PQLs. VOC SIM QAPP Chlorofom 0.050 ug/L, lab LOQ 0.1
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: CCV high for BrMethane - assoc results ND. Low IS PR79-WT-004-SD-01 - pos result for acetone may be biased high. ICV high for ClEthane, carbon disulfide - assoc results ND. CCV high for carbon disulfide - assoc results ND. Nonconformances are not expected to impact data quality; qualifiers not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformance.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?		•		Qualify J
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?				
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			0.3, 1.2, 0.2C
Were holding times met?	•			Please note QAPP needs edits. soil has 28 day HT. QAPP has a 14 day HT as of now - will be edited to reflect correct HT.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	None submitted with sample set.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3617

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3617
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-PW-FD04-01-0511	SN3617-15		Field Duplicate/FD	X		X	X		X		X			X		
PR79-PW-FD04-01-F-0511	SN3617-16		Field Duplicate/FD					X		X		X				
PR79-WT-002-PW-01	SN3617-3		Field Sample/N	X		X	X		X		X			X		
PR79-WT-002-PW-01-F	SN3617-4		Field Sample/N					X		X		X				
PR79-WT-003-PW-01	SN3617-9		Field Sample/N	X		X	X		X		X			X		
PR79-WT-003-PW-01-F	SN3617-10		Field Sample/N					X		X		X				
PR79-SD-FD04-01-0511	SN3617-17	Solid	Field Duplicate/FD			X	X		X				X	X	X	X
PR79-SD-FD04-01-0511	SN3617-18	Solid	Field Duplicate/FD		X		X									
PR79-WT-002-SD-01	SN3617-5	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-002-SD-01	SN3617-6	Solid	Field Sample/N		X		X									
PR79-WT-003-SD-01	SN3617-11	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-003-SD-01	SN3617-12	Solid	Field Sample/N		X		X									
TB-04-SD-01	SN3617-22	Solid	Trip Blank/TB											X		
PR79-SW-FD04-01-0511	SN3617-13	Water	Field Duplicate/FD	X		X	X		X		X			X		
PR79-SW-FD04-01-F-0511	SN3617-14	Water	Field Duplicate/FD					X		X		X				
PR79-WT-002-SW-01	SN3617-1	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-002-SW-01-F	SN3617-2	Water	Field Sample/N					X		X		X				
PR79-WT-003-SW-01	SN3617-7	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-003-SW-01-F	SN3617-8	Water	Field Sample/N					X		X		X				
PR79-WT-004-SW-01	SN3617-19	Water	Field Sample/N	X		X	X		X		X			X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-PW-FD04-01-0511	SN3617-15		Field Duplicate/FD	X
PR79-PW-FD04-01-F-0511	SN3617-16		Field Duplicate/FD	
PR79-WT-002-PW-01	SN3617-3		Field Sample/N	X
PR79-WT-002-PW-01-F	SN3617-4		Field Sample/N	
PR79-WT-003-PW-01	SN3617-9		Field Sample/N	X
PR79-WT-003-PW-01-F	SN3617-10		Field Sample/N	
PR79-SD-FD04-01-0511	SN3617-17	Solid	Field Duplicate/FD	
PR79-SD-FD04-01-0511	SN3617-18	Solid	Field Duplicate/FD	
PR79-WT-002-SD-01	SN3617-5	Solid	Field Sample/N	
PR79-WT-002-SD-01	SN3617-6	Solid	Field Sample/N	
PR79-WT-003-SD-01	SN3617-11	Solid	Field Sample/N	
PR79-WT-003-SD-01	SN3617-12	Solid	Field Sample/N	
TB-04-SD-01	SN3617-22	Solid	Trip Blank/TB	
PR79-SW-FD04-01-0511	SN3617-13	Water	Field Duplicate/FD	X
PR79-SW-FD04-01-F-0511	SN3617-14	Water	Field Duplicate/FD	
PR79-WT-002-SW-01	SN3617-1	Water	Field Sample/N	X
PR79-WT-002-SW-01-F	SN3617-2	Water	Field Sample/N	
PR79-WT-003-SW-01	SN3617-7	Water	Field Sample/N	X
PR79-WT-003-SW-01-F	SN3617-8	Water	Field Sample/N	
PR79-WT-004-SW-01	SN3617-19	Water	Field Sample/N	X

Data Validation Report for SN3617

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-004-SW-01-F	SN3617-20	Water	Field Sample/N					X		X		X				
TB-04-SW-01	SN3617-21	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-004-SW-01-F	SN3617-20	Water	Field Sample/N	
TB-04-SW-01	SN3617-21	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3617. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 73 results (6.67%) out of the 1095 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	% solids -ok
AVS	%solids -ok
BNASIM	%solids - ok
SW6010C	% solids -ok
SW6020A	% solids -ok
SW7470A	No additional comments; see Checklist for detail.
SW7471B	% solids -ok
SW8260C	% solids -ok, container transfer history - ok,
SW9045D	No additional comments; see Checklist for detail.
SW9060A	%solids - ok

Kristin Rutherford

September 23, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277879-2 (BS)/ WG277879-2	Pentachlorophenol	18.25	36 - 141	10 - 141	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-0511	FD	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-SW-FD04-01-0511	FD	Pentachlorophenol	0.950	0.480 ULL	0.480 UJ		ug/l	C
PR79-WT-002-PW-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
PR79-WT-002-SW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-003-PW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-003-SW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-004-SW-01	N	Pentachlorophenol	0.960	0.480 ULL	0.480 UJ		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277641-2 (BS)/ WG277641-2	1,4-Dioxane (p-Dioxane)	27.74	30 - 150	10 - 150	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	1,4-Dioxane (p-Dioxane)	0.120	0.00170 JL	0.00170 J	-	mg/kg	C/TR
PR79-WT-002-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00190 JL	0.00190 J	-	mg/kg	C/TR
PR79-WT-003-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00240 JL	0.00240 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SW-FD04-01-0511 (FD)/ SN3617-13		7.040	< 7	< 14	days	J/UJ	H2	Prep Exceeds UWL
PR79-WT-002-SW-01 (N)/ SN3617-1		7.040	< 7	< 14	days	J/UJ	H2	Prep Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-004-SW-01 (N)/ SN3617-19	2-Methylnaphthalene -d10	92.60	43 - 92	10 - 92	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE14ICW2 (LB)	Vanadium	0.3800	< 0.23	< 4	ug/l	None/None	L	
PBWNE14ICW2 (LB)	Aluminum	19.00	< 15	< 100	ug/l	None/None	L	
PBWNE14ICW2 (LB)	Magnesium	22.00	< 7.8	< 80	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F-0511	FD	Aluminum	300	72.0 J	100 U		ug/l	L
PR79-PW-FD04-01-F-0511	FD	Vanadium	10.0	0.620 J	4.00 U		ug/l	L
PR79-SW-FD04-01-F-0511	FD	Aluminum	300	120 J	300 U		ug/l	L
PR79-SW-FD04-01-F-0511	FD	Vanadium	10.0	0.240 J	4.00 U		ug/l	L
PR79-WT-002-PW-01-F	N	Aluminum	300	151 J	300 U		ug/l	L
PR79-WT-002-PW-01-F	N	Vanadium	10.0	0.920 J	4.00 U		ug/l	L
PR79-WT-002-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	L
PR79-WT-002-SW-01-F	N	Vanadium	10.0	0.530 J	4.00 U		ug/l	L
PR79-WT-003-PW-01-F	N	Vanadium	10.0	1.90 J	4.00 U		ug/l	L
PR79-WT-003-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	L
PR79-WT-003-SW-01-F	N	Vanadium	10.0	0.540 J	4.00 U		ug/l	L
PR79-WT-004-SW-01-F	N	Aluminum	300	110 J	300 U		ug/l	L
PR79-WT-004-SW-01-F	N	Vanadium	10.0	0.330 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-002-SD-01 (N)/ SN3617-18	Lead	0.003330	< 0.00058	< 0.00058	umoles/ g	J/None	D3	
PR79-WT-002-SD-01 (N)/ SN3617-18	Zinc	65.05	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Lead	0.000630	0.00224	0.00224 J		umoles/ g	D3
PR79-SD-FD04-01-0511	FD	Zinc	0.00760	0.0390	0.0390 J		umoles/ g	D3
PR79-WT-002-SD-01	N	Lead	0.000580	0.00557	0.00557 J		umoles/ g	D3
PR79-WT-002-SD-01	N	Zinc	0.00700	0.0766	0.0766 J		umoles/ g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE19ICS2 (LB)/ PBSNE19ICS2	Zinc	0.0007600	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Zinc	0.2900	< 0.17	< 2	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Aluminum	1.500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Magnesium	1.900	< 0.68	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Iron	1.900	< 1.4	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Potassium	40.70	< 2.9	< 100	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Sodium	8.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Sodium	110	58.3 J	110 U		mg/kg	L
PR79-WT-002-SD-01	N	Sodium	70.0	61.9 J	70.0 U		mg/kg	L
PR79-WT-003-SD-01	N	Sodium	79.0	38.9 J	40.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-002-SW-01 (N)/ SN3617-13	Manganese	6.100	< 5	< 5	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SW-FD04-01-0511	FD	Manganese	5.00	24.5	24.5 J		ug/l	D3
PR79-WT-002-SW-01	N	Manganese	5.00	30.6	30.6 J		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE14ICW2 (LB)/ PBWNE14ICW2	Vanadium	0.3800	< 0.23	< 10	ug/l	U/None	L	
PBWNE14ICW2 (LB)/ PBWNE14ICW2	Aluminum	19.00	< 15	< 300	ug/l	U/None	L	
PBWNE14ICW2 (LB)/ PBWNE14ICW2	Magnesium	22.00	< 7.8	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-0511	FD	Vanadium	10.0	1.70 J	4.00 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Aluminum	300	140 J	300 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Vanadium	10.0	0.470 J	4.00 U		ug/l	L
PR79-WT-002-PW-01	N	Vanadium	10.0	1.60 J	4.00 U		ug/l	L
PR79-WT-002-SW-01	N	Aluminum	300	157 J	300 U		ug/l	L
PR79-WT-002-SW-01	N	Vanadium	10.0	0.300 J	4.00 U		ug/l	L
PR79-WT-003-PW-01	N	Vanadium	10.0	2.47 J	4.00 U		ug/l	L
PR79-WT-003-SW-01	N	Aluminum	300	140 J	300 U		ug/l	L
PR79-WT-003-SW-01	N	Vanadium	10.0	0.300 J	4.00 U		ug/l	L
PR79-WT-004-SW-01	N	Aluminum	300	140 J	300 U		ug/l	L
PR79-WT-004-SW-01	N	Vanadium	10.0	0.390 J	4.00 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE14IMW2 (LB)	Cadmium	0.04900	< 0.029	< 0.2	ug/l	None/None	L	
PBWNE14IMW2 (LB)	Cobalt	0.1100	< 0.06	< 0.3	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F-0511	FD	Cadmium	1.00	0.0300 J	0.200 U		ug/l	L
PR79-PW-FD04-01-F-0511	FD	Cobalt	1.00	0.0730 J	0.300 U		ug/l	L
PR79-SW-FD04-01-F-0511	FD	Cobalt	1.00	0.130 J	0.300 U		ug/l	L
PR79-WT-002-PW-01-F	N	Cadmium	1.00	0.0420 J	0.200 U		ug/l	L
PR79-WT-002-PW-01-F	N	Cobalt	1.00	0.130 J	0.300 U		ug/l	L
PR79-WT-002-SW-01-F	N	Cadmium	1.00	0.0780 J	0.200 U		ug/l	L
PR79-WT-002-SW-01-F	N	Cobalt	1.00	0.240 J	0.300 U		ug/l	L
PR79-WT-003-SW-01-F	N	Cadmium	1.00	0.0330 J	0.200 U		ug/l	L
PR79-WT-003-SW-01-F	N	Cobalt	1.00	0.0830 J	0.300 U		ug/l	L
PR79-WT-004-SW-01-F	N	Cadmium	1.00	0.0590 J	0.200 U		ug/l	L
PR79-WT-004-SW-01-F	N	Cobalt	1.00	0.0860 J	0.300 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cadmium	0.02800	< 0.0076	< 0.1	mg/kg	U/None	L	
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cobalt	0.04600	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Cadmium	0.110	0.0260 J	0.110 U		mg/kg	L
PR79-WT-002-SD-01	N	Cadmium	0.0700	0.0260 J	0.0700 U		mg/kg	L
PR79-WT-003-SD-01	N	Cadmium	0.0790	0.0644 J	0.0790 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-002-PW-01 (N)/ SN3617-15	Nickel	2.330	< 2	< 2	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE14IMW2 (LB)/ PBWNE14IMW2	Cadmium	0.04900	< 0.03	< 1	ug/l	U/None	L	
PBWNE14IMW2 (LB)/ PBWNE14IMW2	Cobalt	0.1100	< 0.061	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-0511	FD	Cobalt	1.00	0.520 J	1.00 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Cobalt	1.00	0.170 J	0.300 U		ug/l	L
PR79-WT-002-PW-01	N	Cadmium	1.00	0.0450 J	0.200 U		ug/l	L
PR79-WT-002-PW-01	N	Cobalt	1.00	0.570 J	1.00 U		ug/l	L
PR79-WT-002-SW-01	N	Cadmium	1.00	0.0760 JN	0.200 U		ug/l	L
PR79-WT-002-SW-01	N	Cobalt	1.00	0.290 JN	0.300 U		ug/l	L
PR79-WT-003-PW-01	N	Cadmium	1.00	0.0360 J	0.200 U		ug/l	L
PR79-WT-003-SW-01	N	Cadmium	1.00	0.0390 J	0.200 U		ug/l	L
PR79-WT-003-SW-01	N	Cobalt	1.00	0.190 J	0.300 U		ug/l	L
PR79-WT-004-SW-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-002-SW-01 (MS)/ SN3617-001S	Arsenic	118.0	84 - 116	30 - 125	percent	J/None	M	
PR79-WT-002-SW-01 (MS)/ SN3617-001S	Nickel	120.3	85 - 117	30 - 125	percent	J/None	M	
PR79-WT-002-SW-01 (MS)/ SN3617-001S	Cobalt	121.9	86 - 115	30 - 125	percent	J/None	M	
PR79-WT-002-SW-01 (MS)/ SN3617-001S	Silver	122.6	85 - 116	30 - 125	percent	J/None	M	
PR79-WT-002-SW-01 (MS)/ SN3617-001S	Cadmium	125.6	87 - 115	30 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-002-SW-01	N	Nickel	2.00	0.270 JN	0.270 J	+	ug/l	M/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SD-FD04-01-0511 (FD)/ SN3617-17		93.07	< 24	< 48	hours	J/X	H2	Prep to Test Exceeds UCL
PR79-WT-002-SD-01 (N)/ SN3617-5		92.92	< 24	< 48	hours	J/X	H2	Prep to Test Exceeds UCL
PR79-WT-003-SD-01 (N)/ SN3617-11		92.98	< 24	< 48	hours	J/X	H2	Prep to Test Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	pH	0.100	6.70	6.70 J	-	ph units	H2
PR79-WT-002-SD-01	N	pH	0.100	6.90	6.90 J	-	ph units	H2
PR79-WT-003-SD-01	N	pH	0.100	6.80	6.80 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW9060A, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-002-SD-01 (N)/ SN3617-17	Total Organic Carbon	3100	< 620	< 620	ug/g	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Total Organic Carbon	540	2300	2300 J		ug/g	D3
PR79-WT-002-SD-01	N	Total Organic Carbon	620	5400	5400 J		ug/g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277638-1 (BS)/ WG277638-1	1,2,4-Trichlorobenzene	134.0	70 - 130	10 - 130	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-0511	FD	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-SW-FD04-01-0511	FD	Pentachlorophenol	0.950	0.480 ULL	0.480 UJ		ug/l	C
PR79-WT-002-PW-01	N	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
PR79-WT-002-SW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-003-PW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-003-SW-01	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
PR79-WT-004-SW-01	N	Pentachlorophenol	0.960	0.480 ULL	0.480 UJ		ug/l	C

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	1,4-Dioxane (p-Dioxane)	0.120	0.00170 JL	0.00170 J	-	mg/kg	C/TR
PR79-WT-002-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00190 JL	0.00190 J	-	mg/kg	C/TR
PR79-WT-003-SD-01	N	1,4-Dioxane (p-Dioxane)	0.120	0.00240 JL	0.00240 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F-0511	FD	Aluminum	300	72.0 J	100 U		ug/l	L
PR79-PW-FD04-01-F-0511	FD	Vanadium	10.0	0.620 J	4.00 U		ug/l	L
PR79-SW-FD04-01-F-0511	FD	Aluminum	300	120 J	300 U		ug/l	L
PR79-SW-FD04-01-F-0511	FD	Vanadium	10.0	0.240 J	4.00 U		ug/l	L
PR79-WT-002-PW-01-F	N	Aluminum	300	151 J	300 U		ug/l	L
PR79-WT-002-PW-01-F	N	Vanadium	10.0	0.920 J	4.00 U		ug/l	L
PR79-WT-002-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	L
PR79-WT-002-SW-01-F	N	Vanadium	10.0	0.530 J	4.00 U		ug/l	L
PR79-WT-003-PW-01-F	N	Vanadium	10.0	1.90 J	4.00 U		ug/l	L
PR79-WT-003-SW-01-F	N	Aluminum	300	130 J	300 U		ug/l	L
PR79-WT-003-SW-01-F	N	Vanadium	10.0	0.540 J	4.00 U		ug/l	L
PR79-WT-004-SW-01-F	N	Aluminum	300	110 J	300 U		ug/l	L
PR79-WT-004-SW-01-F	N	Vanadium	10.0	0.330 J	4.00 U		ug/l	L

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Lead	0.000630	0.00224	0.00224 J		umoles/g	D3
PR79-SD-FD04-01-0511	FD	Zinc	0.00760	0.0390	0.0390 J		umoles/g	D3
PR79-WT-002-SD-01	N	Lead	0.000580	0.00557	0.00557 J		umoles/g	D3
PR79-WT-002-SD-01	N	Zinc	0.00700	0.0766	0.0766 J		umoles/g	D3

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Sodium	110	58.3 J	110 U		mg/kg	L

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-002-SD-01	N	Sodium	70.0	61.9 J	70.0 U		mg/kg	L
PR79-WT-003-SD-01	N	Sodium	79.0	38.9 J	40.0 U		mg/kg	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-0511	FD	Vanadium	10.0	1.70 J	4.00 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Aluminum	300	140 J	300 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Vanadium	10.0	0.470 J	4.00 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Manganese	5.00	24.5	24.5 J		ug/l	D3
PR79-WT-002-PW-01	N	Vanadium	10.0	1.60 J	4.00 U		ug/l	L
PR79-WT-002-SW-01	N	Aluminum	300	157 J	300 U		ug/l	L
PR79-WT-002-SW-01	N	Vanadium	10.0	0.300 J	4.00 U		ug/l	L
PR79-WT-002-SW-01	N	Manganese	5.00	30.6	30.6 J		ug/l	D3
PR79-WT-003-PW-01	N	Vanadium	10.0	2.47 J	4.00 U		ug/l	L
PR79-WT-003-SW-01	N	Aluminum	300	140 J	300 U		ug/l	L
PR79-WT-003-SW-01	N	Vanadium	10.0	0.300 J	4.00 U		ug/l	L
PR79-WT-004-SW-01	N	Aluminum	300	140 J	300 U		ug/l	L
PR79-WT-004-SW-01	N	Vanadium	10.0	0.390 J	4.00 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-F-0511	FD	Cadmium	1.00	0.0300 J	0.200 U		ug/l	L
PR79-PW-FD04-01-F-0511	FD	Cobalt	1.00	0.0730 J	0.300 U		ug/l	L
PR79-SW-FD04-01-F-0511	FD	Cobalt	1.00	0.130 J	0.300 U		ug/l	L
PR79-WT-002-PW-01-F	N	Cadmium	1.00	0.0420 J	0.200 U		ug/l	L
PR79-WT-002-PW-01-F	N	Cobalt	1.00	0.130 J	0.300 U		ug/l	L
PR79-WT-002-SW-01-F	N	Cadmium	1.00	0.0780 J	0.200 U		ug/l	L
PR79-WT-002-SW-01-F	N	Cobalt	1.00	0.240 J	0.300 U		ug/l	L
PR79-WT-003-SW-01-F	N	Cadmium	1.00	0.0330 J	0.200 U		ug/l	L
PR79-WT-003-SW-01-F	N	Cobalt	1.00	0.0830 J	0.300 U		ug/l	L
PR79-WT-004-SW-01-F	N	Cadmium	1.00	0.0590 J	0.200 U		ug/l	L
PR79-WT-004-SW-01-F	N	Cobalt	1.00	0.0860 J	0.300 U		ug/l	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Cadmium	0.110	0.0260 J	0.110 U		mg/kg	L
PR79-WT-002-SD-01	N	Cadmium	0.0700	0.0260 J	0.0700 U		mg/kg	L
PR79-WT-003-SD-01	N	Cadmium	0.0790	0.0644 J	0.0790 U		mg/kg	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD04-01-0511	FD	Cobalt	1.00	0.520 J	1.00 U		ug/l	L
PR79-SW-FD04-01-0511	FD	Cobalt	1.00	0.170 J	0.300 U		ug/l	L
PR79-WT-002-PW-01	N	Cadmium	1.00	0.0450 J	0.200 U		ug/l	L

Table of All Qualified Results

Test Method: SW6020A	**Extraction Method: Total**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-002-PW-01	N	Cobalt	1.00	0.570 J	1.00 U		ug/l	L
PR79-WT-002-SW-01	N	Cadmium	1.00	0.0760 JN	0.200 U		ug/l	L
PR79-WT-002-SW-01	N	Cobalt	1.00	0.290 JN	0.300 U		ug/l	L
PR79-WT-002-SW-01	N	Nickel	2.00	0.270 JN	0.270 J	+	ug/l	M/TR
PR79-WT-003-PW-01	N	Cadmium	1.00	0.0360 J	0.200 U		ug/l	L
PR79-WT-003-SW-01	N	Cadmium	1.00	0.0390 J	0.200 U		ug/l	L
PR79-WT-003-SW-01	N	Cobalt	1.00	0.190 J	0.300 U		ug/l	L
PR79-WT-004-SW-01	N	Cobalt	1.00	0.120 J	0.300 U		ug/l	L

Test Method: SW9045D	**Extraction Method: METHOD**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	pH	0.100	6.70	6.70 J	-	ph units	H2
PR79-WT-002-SD-01	N	pH	0.100	6.90	6.90 J	-	ph units	H2
PR79-WT-003-SD-01	N	pH	0.100	6.80	6.80 J	-	ph units	H2

Test Method: SW9060A	**Extraction Method: NONE**							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD04-01-0511	FD	Total Organic Carbon	540	2300	2300 J		ug/g	D3
PR79-WT-002-SD-01	N	Total Organic Carbon	620	5400	5400 J		ug/g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-SW-FD04-01-0511	FD	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-SW-FD04-01-0511	FD	2-Methylnaphthalene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Acenaphthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Acenaphthylene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Benzo(a)anthracene	0.190	0.0950 UL	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Benzo(a)pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Benzo(b)fluoranthene	0.190	0.0950 UL	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Benzo(g,h,i)perylene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Benzo(k)fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Chrysene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Dibenz(a,h)anthracene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Fluoranthene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Fluorene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Indeno(1,2,3-c,d)pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Naphthalene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Pentachlorophenol	0.950	0.480 ULL	0.480 UJ	0.480 UJ	C
PR79-SW-FD04-01-0511	FD	Phenanthrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-SW-FD04-01-0511	FD	Pyrene	0.190	0.0950 U	0.0950 UJ	0.0950 U	
PR79-WT-002-SW-01	N	1,4-Dioxane (p-Dioxane)	0.240	0.170 U	0.170 UJ	0.170 U	
PR79-WT-002-SW-01	N	2-Methylnaphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Acenaphthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Acenaphthylene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Benzo(a)anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Benzo(a)pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Benzo(b)fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Benzo(g,h,i)perylene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Benzo(k)fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Chrysene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Dibenz(a,h)anthracene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Fluoranthene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Fluorene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Indeno(1,2,3-c,d)pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Naphthalene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ	0.480 UJ	C
PR79-WT-002-SW-01	N	Phenanthrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	
PR79-WT-002-SW-01	N	Pyrene	0.190	0.0960 U	0.0960 UJ	0.0960 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01-F-0511	FD	Aluminum	300	72.0 J	72.0 J	100 U	L
PR79-PW-FD04-01-F-0511	FD	Vanadium	10.0	0.620 J	0.620 J	4.00 U	L
PR79-SW-FD04-01-F-0511	FD	Aluminum	300	120 J	120 J	300 U	L
PR79-SW-FD04-01-F-0511	FD	Vanadium	10.0	0.240 J	0.240 J	4.00 U	L
PR79-WT-002-PW-01-F	N	Aluminum	300	151 J	151 J	300 U	L
PR79-WT-002-PW-01-F	N	Vanadium	10.0	0.920 J	0.920 J	4.00 U	L
PR79-WT-002-SW-01-F	N	Aluminum	300	130 J	130 J	300 U	L
PR79-WT-002-SW-01-F	N	Vanadium	10.0	0.530 J	0.530 J	4.00 U	L
PR79-WT-003-PW-01-F	N	Vanadium	10.0	1.90 J	1.90 J	4.00 U	L
PR79-WT-003-SW-01-F	N	Aluminum	300	130 J	130 J	300 U	L
PR79-WT-003-SW-01-F	N	Vanadium	10.0	0.540 J	0.540 J	4.00 U	L
PR79-WT-004-SW-01-F	N	Aluminum	300	110 J	110 J	300 U	L
PR79-WT-004-SW-01-F	N	Vanadium	10.0	0.330 J	0.330 J	4.00 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01-F-0511	FD	Cadmium	1.00	0.0300 J	0.0300 J	0.200 U	L
PR79-PW-FD04-01-F-0511	FD	Cobalt	1.00	0.0730 J	0.0730 J	0.300 U	L
PR79-SW-FD04-01-F-0511	FD	Cobalt	1.00	0.130 J	0.130 J	0.300 U	L
PR79-WT-002-PW-01-F	N	Cadmium	1.00	0.0420 J	0.0420 J	0.200 U	L
PR79-WT-002-PW-01-F	N	Cobalt	1.00	0.130 J	0.130 J	0.300 U	L
PR79-WT-002-SW-01-F	N	Cadmium	1.00	0.0780 J	0.0780 J	0.200 U	L
PR79-WT-002-SW-01-F	N	Cobalt	1.00	0.240 J	0.240 J	0.300 U	L
PR79-WT-003-SW-01-F	N	Cadmium	1.00	0.0330 J	0.0330 J	0.200 U	L
PR79-WT-003-SW-01-F	N	Cobalt	1.00	0.0830 J	0.0830 J	0.300 U	L
PR79-WT-004-SW-01-F	N	Cadmium	1.00	0.0590 J	0.0590 J	0.200 U	L
PR79-WT-004-SW-01-F	N	Cobalt	1.00	0.0860 J	0.0860 J	0.300 U	L

Modified Qualifiers for test method SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD04-01-0511	FD	Nickel	2.00	3.13	3.13 J	3.13	
PR79-WT-002-PW-01	N	Nickel	2.00	0.800 J	0.800 J	0.800 J	TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D3	Field Duplicate RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?			•	
Were LCS/LCSD recoveries within project acceptance limits?			•	
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			RPDs for both PW and SW field duplicate pairs meet criteria.
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3617

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?		•		01RE, 03RE, 07RE, 09RE, 13RE, 15RE, 19RE - Extracted outside 7 day HT. The original analyses were reported. Samples -1 and -13 were incorrectly qualified for HT nonconformances since samples were prepped on 7th day (not >7d). Changed by validator.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report - no action required.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		15 analytes in 3 samples did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: CCV high for pyrene, assoc results ND. Low Int Std in PR79-WT-002-SD-01, PR79-SD-FD04-01-0511, PR79-WT-004-SW-01 - assoc may be biased high. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3617

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see ADR report. Qualifiers added manually for filtered samples.
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?		•		Sodium slightly under-recovered in post spike: PR79-WT-002-SW-01A. No action - all MS/MSD recoveries were OK.
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		see ADR report
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see ADR report
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		see outlier report
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	None submitted with sample set.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			see ADR report. Ni was incorrectly qualified for FD nonconformance, the qualifications were removed since results were <5X LOQ and the abs diff <2X LOQ.
Were QAPP specified laboratory PQLs achieved?		•		3 analytes in 1 sample did not meet the requested RLs
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?				
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report. No action for 1,2,4-Trichlorobenzene (VOCSIM) since bias is high and assoc results ND.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: ICV above criteria for chloroethane, carbon disulfide, assoc results ND. CCV high for Chloroethane, 4-methyl-2-pentanone - assoc results ND. VOCSIM Analysis: Low Int Std 1,4-DICHLOROBENZENE-D4: PR79-SW-FD04-01-0511, PR79-PW-FD04-01-0511, PR79-WT-004-SW-01 - assoc results ND, bias high. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV nonconformance and samples were analyzed w/o corrective action.
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?		•		Qualify J.
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			1.7, 0.1, 4.0C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	None submitted with sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	None submitted with sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		see outlier report
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3680

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3680
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-PW-FD03-01	SN3680-9		Field Duplicate/FD	X		X	X		X		X			X		
PR79-PW-FD03-01-F	SN3680-10		Field Duplicate/FD					X		X		X				
PR79-WT-010-PW-01	SN3680-1		Field Sample/N	X		X	X		X		X			X		
PR79-WT-010-PW-01-F	SN3680-2		Field Sample/N					X		X		X				
PR79-WT-011-PW-01	SN3680-5		Field Sample/N	X		X	X		X		X			X		
PR79-WT-011-PW-01-F	SN3680-6		Field Sample/N					X		X		X				
PR79-SD-FD03-01	SN3680-11	Solid	Field Duplicate/FD			X	X		X				X	X	X	X
PR79-SD-FD03-01	SN3680-12	Solid	Field Duplicate/FD		X		X									
PR79-WT-010-SD-01	SN3680-3	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-010-SD-01	SN3680-4	Solid	Field Sample/N		X		X									
PR79-WT-011-SD-01	SN3680-7	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-011-SD-01	SN3680-8	Solid	Field Sample/N		X		X									
TB-05-SD-01	SN3680-14	Solid	Trip Blank/TB											X		
TB-05-SW-01	SN3680-13	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-PW-FD03-01	SN3680-9		Field Duplicate/FD	X
PR79-PW-FD03-01-F	SN3680-10		Field Duplicate/FD	
PR79-WT-010-PW-01	SN3680-1		Field Sample/N	X
PR79-WT-010-PW-01-F	SN3680-2		Field Sample/N	
PR79-WT-011-PW-01	SN3680-5		Field Sample/N	X
PR79-WT-011-PW-01-F	SN3680-6		Field Sample/N	
PR79-SD-FD03-01	SN3680-11	Solid	Field Duplicate/FD	
PR79-SD-FD03-01	SN3680-12	Solid	Field Duplicate/FD	
PR79-WT-010-SD-01	SN3680-3	Solid	Field Sample/N	
PR79-WT-010-SD-01	SN3680-4	Solid	Field Sample/N	
PR79-WT-011-SD-01	SN3680-7	Solid	Field Sample/N	
PR79-WT-011-SD-01	SN3680-8	Solid	Field Sample/N	
TB-05-SD-01	SN3680-14	Solid	Trip Blank/TB	
TB-05-SW-01	SN3680-13	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3680. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Extracted Internal Standard

Field Duplicate RPD

Lab Blank

LCS Recovery

LCS RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 125 results (18.85%) out of the 663 results (sample and field QC samples) reported are qualified based on review and 3 results (0.45%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW7470A	No additional comments; see Checklist for detail.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

Reviewed by Kristin Rutherford, Chemist, AECOM — July 24, 2020

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM — April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Internal standard

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
perylene-d12/ SN3680-3	Benzo(a)pyrene	1219	10031 - 40126	4013 - 40126	respons e	J/R	S	
perylene-d12/ SN3680-3	Benzo (b)fluoranthene	1219	10031 - 40126	4013 - 40126	respons e	J/R	S	
perylene-d12/ SN3680-3	Benzo (g,h,i)perylene	1219	10031 - 40126	4013 - 40126	respons e	J/R	S	
perylene-d12/ SN3680-3	Benzo (k)fluoranthene	1219	10031 - 40126	4013 - 40126	respons e	J/R	S	
perylene-d12/ SN3680-3	Dibenz (a,h)anthracene	1219	10031 - 40126	4013 - 40126	respons e	J/R	S	
perylene-d12/ SN3680-3	Indeno(1,2,3-c,d)pyrene	1219	10031 - 40126	4013 - 40126	respons e	J/R	S	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Internal standard for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-SD-01	N	Benzo(a)pyrene	0.0230	0.0110 J	0.0110 J	+	mg/kg	TR/S
PR79-WT-010-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0210 JL	0.0210 J	+	mg/kg	C/TR/S
PR79-WT-010-SD-01	N	Benzo(g,h,i)perylene	0.0230	0.0110 U	0.0110 R		mg/kg	S
PR79-WT-010-SD-01	N	Benzo(k)fluoranthene	0.0230	0.0190 J	0.0190 J	+	mg/kg	TR/S
PR79-WT-010-SD-01	N	Dibenz(a,h)anthracene	0.0230	0.0110 U	0.0110 R		mg/kg	S
PR79-WT-010-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0230	0.0110 U	0.0110 R		mg/kg	S

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277866-1RA (LB)/ WG277866-1RA	Chrysene	0.002100	< 0.0017	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Chrysene	0.0240	0.00340 J	0.0120 U		mg/kg	L
PR79-WT-010-SD-01	N	Chrysene	0.0230	0.00220 J	0.0110 U		mg/kg	L
PR79-WT-011-SD-01	N	Chrysene	0.0410	0.0180 J	0.0210 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277879-2 (BS)/ WG277879-2	Pentachlorophenol	18.25	36 - 141	10 - 141	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01	FD	Pentachlorophenol	1.00	0.500 ULL	0.500 UJ		ug/l	C
PR79-WT-010-PW-01	N	Pentachlorophenol	1.40	0.690 ULL	0.690 UJ		ug/l	C
PR79-WT-011-PW-01	N	Pentachlorophenol	0.970	0.480 ULL	0.480 UJ		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277866-2RA (BS)/ WG277866-2RA	1,4-Dioxane (p-Dioxane)	23.09	30 - 150	10 - 150	percent	J/UJ	C	
WG277866-2RA (BS)/ WG277866-2RA	Benzo (b)fluoranthene	50.37	53 - 128	10 - 128	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-SD-FD03-01	FD	Benzo(b)fluoranthene	0.0240	0.0120 UL	0.0120 UJ		mg/kg	C
PR79-WT-010-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00240 JL	0.00240 J	-	mg/kg	C/TR
PR79-WT-010-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0210 JL	0.0210 J	+	mg/kg	C/TR/S
PR79-WT-011-SD-01	N	1,4-Dioxane (p-Dioxane)	0.210	0.00600 JL	0.00600 J	-	mg/kg	C/TR
PR79-WT-011-SD-01	N	Benzo(b)fluoranthene	0.0410	0.0190 JL	0.0190 J	-	mg/kg	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE19ICW1 (LB)	Barium	0.6200	< 0.23	< 5	ug/l	None/None	L	
PBWNE19ICW1 (LB)	Copper	1.500	< 0.63	< 25	ug/l	None/None	L	
PBWNE19ICW1 (LB)	Magnesium	24.00	< 7.8	< 100	ug/l	None/None	L	
PBWNE19ICW1 (LB)	Sodium	29.00	< 24	< 1000	ug/l	None/None	L	
PBWNE19ICW1 (LB)	Potassium	42.00	< 41	< 1000	ug/l	None/None	L	
PBWNE19ICW1 (LB)	Iron	61.10	< 5.4	< 100	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Barium	0.4800	< 0.23	< 5	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Copper	0.9800	< 0.63	< 25	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Magnesium	21.00	< 7.8	< 100	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Sodium	29.00	< 24	< 1000	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01-F	FD	Copper	25.0	2.10 J	10.0 U		ug/l	L
PR79-WT-010-PW-01-F	N	Copper	25.0	2.10 J	10.0 U		ug/l	L
PR79-WT-010-PW-01-F	N	Iron	100	59.3 J	80.0 U		ug/l	L
PR79-WT-010-PW-01-F	N	Potassium	1000	750 J	1000 U		ug/l	L
PR79-WT-011-PW-01-F	N	Copper	25.0	4.10 J	10.0 U		ug/l	L
PR79-WT-011-PW-01-F	N	Potassium	1000	547 J	1000 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-010-SD-01 (N)/ SN3680-12	Nickel	0.01481	< 0.0042	< 0.0042	umoles/ g	J/None	D3	
PR79-WT-010-SD-01 (N)/ SN3680-12	Zinc	0.04680	< 0.0075	< 0.0075	umoles/ g	J/None	D3	
PR79-WT-010-SD-01 (N)/ SN3680-12	Lead	80.58	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Lead	0.000680	0.0156	0.0156 J		umoles/ g	D3
PR79-SD-FD03-01	FD	Nickel	0.00460	0.0211	0.0211 J		umoles/ g	D3
PR79-SD-FD03-01	FD	Zinc	0.00840	0.0784	0.0784 J		umoles/ g	D3
PR79-WT-010-SD-01	N	Lead	0.000580	0.00664	0.00664 J		umoles/ g	D3
PR79-WT-010-SD-01	N	Nickel	0.00420	0.00629	0.00629 J		umoles/ g	D3
PR79-WT-010-SD-01	N	Zinc	0.00750	0.0316	0.0316 J		umoles/ g	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-010-SD-01 (N)/ SN3680-11	Manganese	57.86	< 50	< 50	rpd	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Manganese	0.540	1130	1130 J		mg/kg	D3
PR79-WT-010-SD-01	N	Manganese	0.880	2050	2050 J		mg/kg	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE19ICS2 (LB)/ PBSNE19ICS2	Zinc	0.0007600	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Zinc	0.2900	< 0.17	< 2	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Aluminum	1.500	< 0.71	< 30	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Magnesium	1.900	< 0.68	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Iron	1.900	< 1.4	< 10	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Potassium	40.70	< 2.9	< 100	mg/kg	U/None	L	
PBSNE18ICS2 (LB)/ PBSNE18ICS2	Sodium	8.900	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Sodium	110	63.3 J	110 U		mg/kg	L
PR79-WT-010-SD-01	N	Sodium	88.0	53.6 J	88.0 U		mg/kg	L
PR79-WT-011-SD-01	N	Sodium	170	59.4 J	85.0 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE19ICW1 (LB)/ PBWNE19ICW1	Barium	0.6200	< 0.23	< 5	ug/l	U/None	L	
PBWNE19ICW1 (LB)/ PBWNE19ICW1	Copper	1.500	< 0.63	< 25	ug/l	U/None	L	
PBWNE19ICW1 (LB)/ PBWNE19ICW1	Magnesium	24.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE19ICW1 (LB)/ PBWNE19ICW1	Sodium	29.00	< 24	< 1000	ug/l	U/None	L	
PBWNE19ICW1 (LB)/ PBWNE19ICW1	Potassium	42.00	< 41	< 1000	ug/l	U/None	L	
PBWNE19ICW1 (LB)/ PBWNE19ICW1	Iron	61.10	< 5.4	< 100	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Barium	0.4800	< 0.23	< 5	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Copper	0.9800	< 0.63	< 25	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Magnesium	21.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Sodium	29.00	< 24	< 1000	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01	FD	Copper	25.0	1.30 J	10.0 U		ug/l	L
PR79-WT-010-PW-01	N	Iron	100	90.5 J	100 U		ug/l	L
PR79-WT-010-PW-01	N	Potassium	1000	745 J	1000 U		ug/l	L
PR79-WT-010-PW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	L
PR79-WT-011-PW-01	N	Potassium	1000	919 J	1000 U		ug/l	L
PR79-WT-011-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE19IMW1 (LB)	Nickel	0.9200	< 0.15	< 2	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-PW-01-F	N	Nickel	2.00	0.530 J	1.20 U		ug/l	L
PR79-WT-011-PW-01-F	N	Nickel	2.00	1.10 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSWNE19IMW2 (BS)	Arsenic	116.8	84 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Cobalt	117.2	86 - 115	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Thallium	117.5	82 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Silver	119.4	85 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Cadmium	124.4	87 - 115	40 - 150	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01-F	FD	Cadmium	1.00	0.0360 J	0.0360 J	+	ug/l	C/TR
PR79-PW-FD03-01-F	FD	Cobalt	1.00	0.180 J	0.180 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cadmium	0.02800	< 0.0076	< 0.1	mg/kg	U/None	L	
PBSNE18IMS1 (LB)/ PBSNE18IMS1	Cobalt	0.04600	< 0.0054	< 0.1	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Cadmium	0.110	0.0490 J	0.110 U		mg/kg	L
PR79-WT-010-SD-01	N	Cadmium	0.0880	0.0530 J	0.0880 U		mg/kg	L
PR79-WT-011-SD-01	N	Cadmium	0.170	0.100 J	0.170 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE19IMW1 (LB)/ PBWNE19IMW1	Nickel	0.9200	< 0.15	< 2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-PW-01	N	Nickel	2.00	1.00 J	1.20 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Arsenic	117.0	84 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Cobalt	117.2	86 - 115	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Thallium	118.0	82 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Silver	119.4	85 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Cadmium	124.4	87 - 115	40 - 150	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01	FD	Cadmium	1.00	0.0680 J	0.0680 J	+	ug/l	C/TR
PR79-PW-FD03-01	FD	Cobalt	1.00	0.210 J	0.210 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-010-SD-01 (N)/ SN3680-3	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	78.70	79 - 119	10 - 119	percent	J/UJ	I	
PR79-WT-011-SD-01 (N)/ SN3680-7	1-Bromo-4-fluorobenzene (4-Bromofluorobenzene)	73.30	79 - 119	10 - 119	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-SD-01	N	1,1,1-Trichloroethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,1-Dichloroethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,1-Dichloroethene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2,3-Trichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2,4-Trichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2,4-Trimethylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2-Dichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,3,5-Trimethylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,3-Dichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	2-Butanone (MEK)	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Acetone	0.0300	0.0540	0.0540 J	-	mg/kg	I
PR79-WT-010-SD-01	N	Benzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Bromodichloromethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Bromomethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Carbon disulfide	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Chloroethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Chloroform	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Chloromethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	cis-1,2-Dichloroethene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Dibromochloromethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Ethylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Isopropylbenzene (Cumene)	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	m,p-Xylene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Methylene chloride	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	n-Butylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	n-Propylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-SD-01	N	o-Xylene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	sec-Butylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	tert-Butyl alcohol	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	tert-Butylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Toluene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	trans-1,2-Dichloroethene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Trichloroethene (TCE)	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Vinyl chloride	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,1-Dichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,1-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	2-Butanone (MEK)	0.0500	0.0660	0.0660 J	-	mg/kg	I
PR79-WT-011-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0500	0.0250 U	0.0250 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Acetone	0.0500	0.0580	0.0580 J	-	mg/kg	I
PR79-WT-011-SD-01	N	Benzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Bromodichloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Bromomethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Carbon disulfide	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Chloroethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Chloroform	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Chloromethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Dibromochloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Ethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	m,p-Xylene	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Methylene chloride	0.0500	0.0250 U	0.0250 UJ		mg/kg	I
PR79-WT-011-SD-01	N	n-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	n-Propylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	o-Xylene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	sec-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	tert-Butyl alcohol	0.0500	0.0250 U	0.0250 UJ		mg/kg	I

Qualified Results associated with the Surrogate for SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-011-SD-01	N	tert-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Toluene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Trichloroethene (TCE)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Vinyl chloride	0.0200	0.0100 U	0.0100 UJ		mg/kg	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-05-SD-01 (TB)/ SN3680-14	Methylene chloride	0.01000	< 0.0079	< 0.025	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-SD-FD03-01 (FD)/ SN3680-11		74.67	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-010-SD-01 (N)/ SN3680-3		74.75	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-011-SD-01 (N)/ SN3680-7		72.00	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	pH	0.100	5.70	5.70 J	-	ph units	H2
PR79-WT-010-SD-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2
PR79-WT-011-SD-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-05-SW-01 (TB)/ SN3680-13	Benzene	0.01100	< 0.009	< 0.05	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01	FD	Pentachlorophenol	1.00	0.500 ULL	0.500 UJ		ug/l	C
PR79-WT-010-PW-01	N	Pentachlorophenol	1.40	0.690 ULL	0.690 UJ		ug/l	C
PR79-WT-011-PW-01	N	Pentachlorophenol	0.970	0.480 ULL	0.480 UJ		ug/l	C

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Chrysene	0.0240	0.00340 J	0.0120 U		mg/kg	L
PR79-SD-FD03-01	FD	1,4-Dioxane (p-Dioxane)	0.120	0.00180 JL	0.00180 J	-	mg/kg	C/TR
PR79-SD-FD03-01	FD	Benzo(b)fluoranthene	0.0240	0.0120 UL	0.0120 UJ		mg/kg	C
PR79-WT-010-SD-01	N	Benzo(a)pyrene	0.0230	0.0110 J	0.0110 J	+	mg/kg	TR/S
PR79-WT-010-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0210 JL	0.0210 J	+	mg/kg	C/TR/S
PR79-WT-010-SD-01	N	Benzo(g,h,i)perylene	0.0230	0.0110 U	0.0110 R		mg/kg	S
PR79-WT-010-SD-01	N	Benzo(k)fluoranthene	0.0230	0.0190 J	0.0190 J	+	mg/kg	TR/S
PR79-WT-010-SD-01	N	Dibenz(a,h)anthracene	0.0230	0.0110 U	0.0110 R		mg/kg	S
PR79-WT-010-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0230	0.0110 U	0.0110 R		mg/kg	S
PR79-WT-010-SD-01	N	Chrysene	0.0230	0.00220 J	0.0110 U		mg/kg	L
PR79-WT-010-SD-01	N	1,4-Dioxane (p-Dioxane)	0.110	0.00240 JL	0.00240 J	-	mg/kg	C/TR
PR79-WT-011-SD-01	N	Chrysene	0.0410	0.0180 J	0.0210 U		mg/kg	L
PR79-WT-011-SD-01	N	1,4-Dioxane (p-Dioxane)	0.210	0.00600 JL	0.00600 J	-	mg/kg	C/TR
PR79-WT-011-SD-01	N	Benzo(b)fluoranthene	0.0410	0.0190 JL	0.0190 J	-	mg/kg	C/TR

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01-F	FD	Copper	25.0	2.10 J	10.0 U		ug/l	L
PR79-WT-010-PW-01-F	N	Copper	25.0	2.10 J	10.0 U		ug/l	L
PR79-WT-010-PW-01-F	N	Iron	100	59.3 J	80.0 U		ug/l	L
PR79-WT-010-PW-01-F	N	Potassium	1000	750 J	1000 U		ug/l	L
PR79-WT-011-PW-01-F	N	Copper	25.0	4.10 J	10.0 U		ug/l	L
PR79-WT-011-PW-01-F	N	Potassium	1000	547 J	1000 U		ug/l	L

Test Method: SW6010C Extraction Method: AVS

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Lead	0.000680	0.0156	0.0156 J		umoles/g	D3
PR79-SD-FD03-01	FD	Nickel	0.00460	0.0211	0.0211 J		umoles/g	D3
PR79-SD-FD03-01	FD	Zinc	0.00840	0.0784	0.0784 J		umoles/g	D3
PR79-WT-010-SD-01	N	Lead	0.000580	0.00664	0.00664 J		umoles/g	D3
PR79-WT-010-SD-01	N	Nickel	0.00420	0.00629	0.00629 J		umoles/g	D3
PR79-WT-010-SD-01	N	Zinc	0.00750	0.0316	0.0316 J		umoles/g	D3

Table of All Qualified Results

Test Method: SW6010C Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Sodium	110	63.3 J	110 U		mg/kg	L
PR79-SD-FD03-01	FD	Manganese	0.540	1130	1130 J		mg/kg	D3
PR79-WT-010-SD-01	N	Sodium	88.0	53.6 J	88.0 U		mg/kg	L
PR79-WT-010-SD-01	N	Manganese	0.880	2050	2050 J		mg/kg	D3
PR79-WT-011-SD-01	N	Sodium	170	59.4 J	85.0 U		mg/kg	L

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01	FD	Copper	25.0	1.30 J	10.0 U		ug/l	L
PR79-WT-010-PW-01	N	Iron	100	90.5 J	100 U		ug/l	L
PR79-WT-010-PW-01	N	Potassium	1000	745 J	1000 U		ug/l	L
PR79-WT-010-PW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	L
PR79-WT-011-PW-01	N	Potassium	1000	919 J	1000 U		ug/l	L
PR79-WT-011-PW-01	N	Copper	25.0	3.20 J	10.0 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01-F	FD	Cadmium	1.00	0.0360 J	0.0360 J	+	ug/l	C/TR
PR79-PW-FD03-01-F	FD	Cobalt	1.00	0.180 J	0.180 J	+	ug/l	C/TR
PR79-WT-010-PW-01-F	N	Nickel	2.00	0.530 J	1.20 U		ug/l	L
PR79-WT-011-PW-01-F	N	Nickel	2.00	1.10 J	1.20 U		ug/l	L

Test Method: SW6020A Extraction Method: SW3050B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	Cadmium	0.110	0.0490 J	0.110 U		mg/kg	L
PR79-WT-010-SD-01	N	Cadmium	0.0880	0.0530 J	0.0880 U		mg/kg	L
PR79-WT-011-SD-01	N	Cadmium	0.170	0.100 J	0.170 U		mg/kg	L

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-PW-FD03-01	FD	Cadmium	1.00	0.0680 J	0.0680 J	+	ug/l	C/TR
PR79-PW-FD03-01	FD	Cobalt	1.00	0.210 J	0.210 J	+	ug/l	C/TR
PR79-WT-010-PW-01	N	Nickel	2.00	1.00 J	1.20 U		ug/l	L

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-SD-01	N	1,1,1-Trichloroethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,1-Dichloroethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,1-Dichloroethene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2,3-Trichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2,4-Trichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2,4-Trimethylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,2-Dichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,3,5-Trimethylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	1,3-Dichlorobenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C	Extraction Method: SW5035							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-SD-01	N	2-Butanone (MEK)	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Acetone	0.0300	0.0540	0.0540 J	-	mg/kg	I
PR79-WT-010-SD-01	N	Benzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Bromodichloromethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Bromomethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Carbon disulfide	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Chloroethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Chloroform	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Chloromethane	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	cis-1,2-Dichloroethene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Dibromochloromethane	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Ethylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Isopropylbenzene (Cumene)	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	m,p-Xylene	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Methylene chloride	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	n-Butylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	n-Propylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	o-Xylene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	sec-Butylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	tert-Butyl alcohol	0.0300	0.0150 U	0.0150 UJ		mg/kg	I
PR79-WT-010-SD-01	N	tert-Butylbenzene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Toluene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	trans-1,2-Dichloroethene	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Trichloroethene (TCE)	0.00600	0.00300 U	0.00300 UJ		mg/kg	I
PR79-WT-010-SD-01	N	Vinyl chloride	0.0120	0.00600 U	0.00600 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,1,1-Trichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,1-Dichloroethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,1-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2,3-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2,4-Trichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2,4-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,2-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,3,5-Trimethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	1,3-Dichlorobenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	2-Butanone (MEK)	0.0500	0.0660	0.0660 J	-	mg/kg	I
PR79-WT-011-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.0500	0.0250 U	0.0250 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Acetone	0.0500	0.0580	0.0580 J	-	mg/kg	I
PR79-WT-011-SD-01	N	Benzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I

Table of All Qualified Results

Test Method: SW8260C Extraction Method: SW5035

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-011-SD-01	N	Bromodichloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Bromomethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Carbon disulfide	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Chloroethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Chloroform	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Chloromethane	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	cis-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Dibromochloromethane	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Ethylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Isopropylbenzene (Cumene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	m,p-Xylene	0.0200	0.0100 U	0.0100 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Methylene chloride	0.0500	0.0250 U	0.0250 UJ		mg/kg	I
PR79-WT-011-SD-01	N	n-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	n-Propylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	o-Xylene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	sec-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	tert-Butyl alcohol	0.0500	0.0250 U	0.0250 UJ		mg/kg	I
PR79-WT-011-SD-01	N	tert-Butylbenzene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Toluene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	trans-1,2-Dichloroethene	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Trichloroethene (TCE)	0.0100	0.00500 U	0.00500 UJ		mg/kg	I
PR79-WT-011-SD-01	N	Vinyl chloride	0.0200	0.0100 U	0.0100 UJ		mg/kg	I

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-SD-FD03-01	FD	pH	0.100	5.70	5.70 J	-	ph units	H2
PR79-WT-010-SD-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2
PR79-WT-011-SD-01	N	pH	0.100	5.60	5.60 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-010-SD-01	N	Benzo(a)pyrene	0.0230	0.0110 J	0.0110 J	0.0110 J	TR/S
PR79-WT-010-SD-01	N	Benzo(b)fluoranthene	0.0230	0.0210 JL	0.0210 J	0.0210 J	C/TR/S
PR79-WT-010-SD-01	N	Benzo(g,h,i)perylene	0.0230	0.0110 U	0.0110 U	0.0110 R	S
PR79-WT-010-SD-01	N	Benzo(k)fluoranthene	0.0230	0.0190 J	0.0190 J	0.0190 J	TR/S
PR79-WT-010-SD-01	N	Dibenz(a,h)anthracene	0.0230	0.0110 U	0.0110 U	0.0110 R	S
PR79-WT-010-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0230	0.0110 U	0.0110 U	0.0110 R	S

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-PW-FD03-01-F	FD	Copper	25.0	2.10 J	2.10 J	10.0 U	L
PR79-WT-010-PW-01-F	N	Copper	25.0	2.10 J	2.10 J	10.0 U	L
PR79-WT-010-PW-01-F	N	Iron	100	59.3 J	59.3 J	80.0 U	L
PR79-WT-010-PW-01-F	N	Potassium	1000	750 J	750 J	1000 U	L
PR79-WT-011-PW-01-F	N	Copper	25.0	4.10 J	4.10 J	10.0 U	L
PR79-WT-011-PW-01-F	N	Potassium	1000	547 J	547 J	1000 U	L

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-010-PW-01-F	N	Nickel	2.00	0.530 J	0.530 J	1.20 U	L
PR79-WT-011-PW-01-F	N	Nickel	2.00	1.10 J	1.10 J	1.20 U	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D3	Field Duplicate RPD
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
S	Internal standard
T	Trip Blank
TR	Trace Level Detect

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Mg in PB PBSNE18IMS1; no actions
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		no MS
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3680

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			samples re-extracted past HT, reported from initial within HT
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		AQ: surr %Rs out in MB and/or LCS. Pentachlorophenol in MB may be biased low; assoc samples ND, no quals. CS surr %R biased high, assoc LCS cmpds ok, no quals. SO: all surr %R low in MB. Batch re-extracted past HT. Initial and RE sample surr %Rs within limits. No quals.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		WG277866-1RA (SO) chrysene see outlier report
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			LCS only
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		no MS in this set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: BNASIM/SW3520 7 analytes in 1 sample; BNASIM/SW3550 17 analytes in 3 samples
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not addressed in 2A validation: RSD outside criteria for 14-dioxane; assoc result may be biased. CCV biased high for 14-dioxane, pyrene, Indeno(1,2,3-c,d)pyrene, Dibenz (a,h)anthracene: assoc pos results may be biased high. Low IS PR79-WT-010-SD-01 (perylene-d12 <20%); assoc ND results for Benzo(g,h,i)perylene, Dibenz(a,h)anthracene, Indeno(1,2,3-c,d)pyrene would be rejected, pos results Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene may be biased high (J+). Results were rejected (R) or qualified (J+) based on discussions with Corps.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			Internal Std <20% in PR79-WT-010-SD-01. Assoc ND results for Benzo(g,h,i)perylene, Dibenz(a,h)anthracene, Indeno(1,2,3-c,d)pyrene were rejected (R) based on discussions with Corps.

Data Validation Report for SN3680

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. Lab blanks manually applied to filtered samples.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		see FD outlier report
Were QAPP specified laboratory PQLs achieved?		•		1 analyte in 1 sample
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		ICSA out for Mn - no quals since assoc results >10X interference
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outlier report. Some results for -F samples negated manually.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		No MS in this data set
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?		•		See anomalies report; 6 analytes in 2 samples did not meet the requested RLs.”
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			not all issues noted in case narrative (eg, CS)
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outlier report
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		TB-05-SD-01: methylene chloride 0.01 mg/kg (8260), TB-05-SW-01: Benzene (0.011 ug/L) VOCSIM. No actions; assoc results for both ND.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			see FD report
Were QAPP specified laboratory PQLs achieved?		•		see anomalies: 23 analytes in 3 samples
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: ICV low for ClMethane, assoc result in TB may be biased low. ICV high for ClEthane and carbon disulfide; assoc results ND. CCV high for acetone, assoc results ND. CCV high for acetone, 2-butanone, 4 -methyl-2-pentanone; assoc positive result for acetone in PR79-WT-011-PW-01 may be biased high. Low IS response PR79-WT-010-SD-01, PR79-WT-011-SD-01, PR79-SD-FD03-01: assoc results ND, bias high. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		see outlier report - qualified for HT; not noted in case narrative
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	no lab dup in this set
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			HT exceedance not noted in case narrative
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory PQLs achieved?	•			no ND results. ADR_LOD Detail notes one analyte in one sample
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3763

Facility:	D01RI0063-02, Nike PR-79 (AECOM)
Event:	2020 Spring SW SE PW
SDG:	SN3763
Guidance Document:	Nike PR-79 (AECOM) UFP-QAPP
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Westbrook, ME
Data Review Contractor:	AECOM
Data Review Level:	S2AVEM
Primary Data Reviewer:	Kristin Rutherford, Chemist
Second Reviewer:	Richard Purdy, Senior Scientist
Date Submitted:	March 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-008-PW-01	SN3763-21		Field Sample/N	X		X	X		X		X			X		
PR79-WT-008-PW-01-F	SN3763-22		Field Sample/N					X		X		X				
PR79-WT-021-PW-01	SN3763-26		Field Sample/N	X		X	X		X		X			X		
PR79-WT-008-SD-01	SN3763-23	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-008-SD-01	SN3763-24	Solid	Field Sample/N		X		X									
PR79-WT-021-SD-01	SN3763-27	Solid	Field Sample/N			X	X		X				X	X	X	X
PR79-WT-021-SD-01	SN3763-28	Solid	Field Sample/N		X		X									
TB-06-SD-01	SN3763-18	Solid	Trip Blank/TB											X		
EB-03-PW-01	SN3763-29	Water	Equipment Blank/EB	X		X	X		X		X			X		
EB-03-PW-01-F	SN3763-30	Water	Equipment Blank/EB					X		X		X				
EB-03-SD-01	SN3763-31	Water	Equipment Blank/EB											X		
PR79-WT-008-SW-01	SN3763-19	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-008-SW-01-F	SN3763-20	Water	Field Sample/N					X		X		X				
PR79-WT-009-SW-01	SN3763-7	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-009-SW-01-F	SN3763-8	Water	Field Sample/N					X		X		X				
PR79-WT-010-SW-01	SN3763-9	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-010-SW-01-F	SN3763-10	Water	Field Sample/N					X		X		X				
PR79-WT-011-SW-01	SN3763-11	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-011-SW-01-F	SN3763-12	Water	Field Sample/N					X		X		X				
PR79-WT-012-SW-01	SN3763-13	Water	Field Sample/N	X		X	X		X		X			X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-008-PW-01	SN3763-21		Field Sample/N	X
PR79-WT-008-PW-01-F	SN3763-22		Field Sample/N	
PR79-WT-021-PW-01	SN3763-26		Field Sample/N	X
PR79-WT-008-SD-01	SN3763-23	Solid	Field Sample/N	
PR79-WT-008-SD-01	SN3763-24	Solid	Field Sample/N	
PR79-WT-021-SD-01	SN3763-27	Solid	Field Sample/N	
PR79-WT-021-SD-01	SN3763-28	Solid	Field Sample/N	
TB-06-SD-01	SN3763-18	Solid	Trip Blank/TB	
EB-03-PW-01	SN3763-29	Water	Equipment Blank/EB	X
EB-03-PW-01-F	SN3763-30	Water	Equipment Blank/EB	
EB-03-SD-01	SN3763-31	Water	Equipment Blank/EB	
PR79-WT-008-SW-01	SN3763-19	Water	Field Sample/N	X
PR79-WT-008-SW-01-F	SN3763-20	Water	Field Sample/N	
PR79-WT-009-SW-01	SN3763-7	Water	Field Sample/N	X
PR79-WT-009-SW-01-F	SN3763-8	Water	Field Sample/N	
PR79-WT-010-SW-01	SN3763-9	Water	Field Sample/N	X
PR79-WT-010-SW-01-F	SN3763-10	Water	Field Sample/N	
PR79-WT-011-SW-01	SN3763-11	Water	Field Sample/N	X
PR79-WT-011-SW-01-F	SN3763-12	Water	Field Sample/N	
PR79-WT-012-SW-01	SN3763-13	Water	Field Sample/N	X

Data Validation Report for SN3763

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2340B	AVS	BNASIM	SW6010C	SW6010C - Dissolved	SW6020A	SW6020A - Dissolved	SW7470A	SW7470A - Dissolved	SW7471B	SW8260C	SW9045D	SW9060A
PR79-WT-012-SW-01-F	SN3763-14	Water	Field Sample/N					X		X		X				
PR79-WT-021-SW-01	SN3763-25	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-029-SW-01-F-R	SN3763-2	Water	Field Sample/N					X		X		X				
PR79-WT-029-SW-01-R	SN3763-1	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-030-SW-01-F-R	SN3763-4	Water	Field Sample/N					X		X		X				
PR79-WT-030-SW-01-R	SN3763-3	Water	Field Sample/N	X		X	X		X		X			X		
PR79-WT-031-SW-01-F-R	SN3763-6	Water	Field Sample/N					X		X		X				
PR79-WT-031-SW-01-R	SN3763-5	Water	Field Sample/N	X		X	X		X		X			X		
SWBG-EB-01-01-F-R	SN3763-17	Water	Equipment Blank/EB					X		X		X				
SWBG-EB-01-01-R	SN3763-16	Water	Equipment Blank/EB	X		X	X		X		X			X		
TB-01-PW-01	SN3763-15	Water	Trip Blank/TB											X		

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	VOCSIMC
PR79-WT-012-SW-01-F	SN3763-14	Water	Field Sample/N	
PR79-WT-021-SW-01	SN3763-25	Water	Field Sample/N	X
PR79-WT-029-SW-01-F-R	SN3763-2	Water	Field Sample/N	
PR79-WT-029-SW-01-R	SN3763-1	Water	Field Sample/N	X
PR79-WT-030-SW-01-F-R	SN3763-4	Water	Field Sample/N	
PR79-WT-030-SW-01-R	SN3763-3	Water	Field Sample/N	X
PR79-WT-031-SW-01-F-R	SN3763-6	Water	Field Sample/N	
PR79-WT-031-SW-01-R	SN3763-5	Water	Field Sample/N	X
SWBG-EB-01-01-F-R	SN3763-17	Water	Equipment Blank/EB	
SWBG-EB-01-01-R	SN3763-16	Water	Equipment Blank/EB	X
TB-01-PW-01	SN3763-15	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2AVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Nike PR-79 (AECOM) UFP-QAPP and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Westbrook, ME and were reported under sample delivery group (SDG) SN3763. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

Blank - Negative

Equipment Blank

Extracted Internal Standard

Lab Blank

LCS Recovery

LCS RPD

MS Recovery

MS RPD

Prep Hold Time

Surrogate

Test Hold Time

Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 147 results (8.93%) out of the 1646 results (sample and field QC samples) reported are qualified based on review and 5 results (0.30%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2340B	No additional comments; see Checklist for detail.
AVS	No additional comments; see Checklist for detail.
BNASIM	No additional comments; see Checklist for detail.
SW6010C	EBs were collected for SW (TOTAL and FLDFLT) and PW (TOTAL and FLDFLT). Due to limitations in FUDSChem, results in ADR quality control outlier tables appear to be associated with EBs incorrectly. Qualifications were applied by matrix and prep method.
SW6020A	EBs were collected for SW (TOTAL and FLDFLT) and PW (TOTAL and FLDFLT). Due to limitations in FUDSChem, results in ADR quality control outlier tables appear to be associated with EBs incorrectly. Qualifications were applied by matrix and prep method.
SW7470A	EBs were collected for SW (TOTAL and FLDFLT) and PW (TOTAL and FLDFLT). Due to limitations in FUDSChem, results in ADR quality control outlier tables appear to be associated with EBs incorrectly. Qualifications were applied by matrix and prep method.
SW7471B	No additional comments; see Checklist for detail.
SW8260C	No additional comments; see Checklist for detail.
SW9045D	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

Kristin Rutherford

July 28, 2020

Reviewed by Kristin Rutherford, Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Kristin Rutherford

Reviewed by Richard Purdy, Senior Scientist, AECOM

April 01, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)/ SN3763-29	Chrysene	0.05400	< 0.034	< 0.19	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Chrysene	0.05200	< 0.034	< 0.19	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG278129-1 (LB)/ WG278129-1	Benzo (a)anthracene	0.06800	< 0.046	< 0.2	ug/l	U/None	L	
WG278129-1 (LB)/ WG278129-1	Chrysene	0.07400	< 0.036	< 0.2	ug/l	U/None	L	
WG278129-1 (LB)/ WG278129-1	Pyrene	0.1100	< 0.059	< 0.2	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01	EB	Chrysene	0.190	0.0540 J	0.0950 U		ug/l	L
PR79-WT-008-PW-01	N	Chrysene	0.200	0.0520 J	0.100 U		ug/l	L
PR79-WT-008-SW-01	N	Chrysene	0.190	0.0450 J	0.0930 U		ug/l	L
PR79-WT-009-SW-01	N	Chrysene	0.190	0.0420 J	0.0960 U		ug/l	L
PR79-WT-010-SW-01	N	Chrysene	0.200	0.0500 J	0.100 U		ug/l	L
PR79-WT-012-SW-01	N	Benzo(a)anthracene	0.200	0.0480 J	0.100 U		ug/l	L
PR79-WT-012-SW-01	N	Chrysene	0.200	0.0750 J	0.100 U		ug/l	L
PR79-WT-012-SW-01	N	Pyrene	0.200	0.0630 JB	0.100 U		ug/l	L
PR79-WT-021-PW-01	N	Chrysene	0.200	0.0580 J	0.100 U		ug/l	L
PR79-WT-021-SW-01	N	Chrysene	0.190	0.0520 J	0.0960 U		ug/l	L
PR79-WT-031-SW-01-R	N	Chrysene	0.190	0.0580 J	0.0940 U		ug/l	L
SWBG-EB-01-01-R	EB	Chrysene	0.190	0.0520 J	0.0930 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277866-1RA (LB)/ WG277866-1RA	Chrysene	0.002100	< 0.0017	< 0.02	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	Chrysene	0.0560	0.0360 J	0.0560 U		mg/kg	L
PR79-WT-021-SD-01	N	Chrysene	0.0640	0.0230 J	0.0320 UJ		mg/kg	L/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG277866-2RA (BS)/ WG277866-2RA	1,4-Dioxane (p-Dioxane)	23.09	30 - 150	10 - 150	percent	J/UJ	C	
WG277866-2RA (BS)/ WG277866-2RA	Benzo (b)fluoranthene	50.37	53 - 128	10 - 128	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	1,4-Dioxane (p-Dioxane)	0.280	0.140 UL	0.140 UJ		mg/kg	C
PR79-WT-008-SD-01	N	Benzo(b)fluoranthene	0.0560	0.0440 JL	0.0440 J	-	mg/kg	C/TR
PR79-WT-021-SD-01	N	1,4-Dioxane (p-Dioxane)	0.320	0.0100 J	0.0100 J	-	mg/kg	C/I/TR
PR79-WT-021-SD-01	N	Benzo(b)fluoranthene	0.0640	0.200	0.200 J	-	mg/kg	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-009-SW-01 (N)/ SN3763-7	2,4-Dibromophenol	9.240	10 - 130	10 - 130	percent	J/X	I	
PR79-WT-010-SW-01 (N)/ SN3763-9	2,4-Dibromophenol	4.880	10 - 130	10 - 130	percent	J/X	I	
PR79-WT-010-SW-01 (N)/ SN3763-9	2-Methylnaphthalene-d10	92.60	43 - 92	10 - 92	percent	J/None	I	
PR79-WT-029-SW-01-R (N)/ SN3763-1	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-WT-031-SW-01-R (N)/ SN3763-5	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/X	I	
PR79-WT-031-SW-01-R (N)/ SN3763-5	2-Methylnaphthalene-d10	92.50	43 - 92	10 - 92	percent	J/None	I	
SWBG-EB-01-01-R (EB)/ SN3763-16	2,4-Dibromophenol	6.000	10 - 130	10 - 130	percent	J/X	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-009-SW-01	N	Pentachlorophenol	0.960	0.480 U	0.480 R		ug/l	I
PR79-WT-010-SW-01	N	Pentachlorophenol	1.00	0.500 U	0.500 R		ug/l	I
PR79-WT-029-SW-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 R		ug/l	I
PR79-WT-031-SW-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 R		ug/l	I
SWBG-EB-01-01-R	EB	Pentachlorophenol	0.930	0.470 U	0.470 R		ug/l	I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-021-SD-01 (N)/ SN3763-27	Pyrene-d10	12.90	31 - 128	10 - 128	percent	J/UJ	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-021-SD-01	N	1,4-Dioxane (p-Dioxane)	0.320	0.0100 J	0.0100 J	-	mg/kg	C/I/TR
PR79-WT-021-SD-01	N	2-Methylnaphthalene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Acenaphthene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Acenaphthylene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Anthracene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Benzo(a)anthracene	0.0640	0.0110 J	0.0110 J	-	mg/kg	I/TR
PR79-WT-021-SD-01	N	Benzo(a)pyrene	0.0640	0.0940	0.0940 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Benzo(b)fluoranthene	0.0640	0.200	0.200 J	-	mg/kg	C/I
PR79-WT-021-SD-01	N	Benzo(g,h,i)perylene	0.0640	0.120	0.120 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Benzo(k)fluoranthene	0.0640	0.0770	0.0770 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Chrysene	0.0640	0.0230 J	0.0320 UJ		mg/kg	L/I
PR79-WT-021-SD-01	N	Dibenz(a,h)anthracene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Fluoranthene	0.0640	0.0280 J	0.0280 J	-	mg/kg	I/TR
PR79-WT-021-SD-01	N	Fluorene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0640	0.0910	0.0910 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Naphthalene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Phenanthrene	0.0640	0.0210 J	0.0210 J	-	mg/kg	I/TR
PR79-WT-021-SD-01	N	Pyrene	0.0640	0.0190 J	0.0190 J	-	mg/kg	I/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01-F (EB)/ SN3763-30	Copper	1.400	< 0.63	< 25	ug/l	U/None	V	
EB-03-PW-01-F (EB)/ SN3763-30	Magnesium	10.00	< 7.8	< 100	ug/l	U/None	V	
EB-03-PW-01-F (EB)/ SN3763-30	Zinc	3.400	< 0.72	< 20	ug/l	U/None	V	
EB-03-PW-01-F (EB)/ SN3763-30	Calcium	36.00	< 11	< 100	ug/l	U/None	V	
EB-03-PW-01-F (EB)/ SN3763-30	Potassium	49.00	< 41	< 1000	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Barium	0.5000	< 0.23	< 5	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Zinc	1.100	< 0.72	< 20	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Copper	1.500	< 0.63	< 25	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Calcium	140.0	< 11	< 100	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Aluminum	15.00	< 15	< 300	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Magnesium	34.00	< 7.8	< 100	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Sodium	471.0	< 24	< 1000	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Iron	5.900	< 5.4	< 100	ug/l	U/None	V	
SWBG-EB-01-01-F-R (EB)/ SN3763-17	Potassium	58.00	< 41	< 1000	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01	N	Aluminum	300	160 J	300 U		ug/l	V
PR79-WT-008-PW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01	N	Copper	25.0	1.00 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01-F	N	Zinc	20.0	3.30 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01-F	N	Copper	25.0	1.20 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Aluminum	300	95.0 J	100 U		ug/l	V
PR79-WT-008-SW-01	N	Zinc	20.0	9.38 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Potassium	1000	412 J	500 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Aluminum	300	94.0 J	100 U		ug/l	V
PR79-WT-008-SW-01-F	N	Iron	100	27.0 J	80.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Copper	25.0	0.900 J	10.0 U		ug/l	L/V

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SW-01-F	N	Potassium	1000	439 J	500 U		ug/l	L/V
PR79-WT-009-SW-01	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-009-SW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	V
PR79-WT-009-SW-01	N	Potassium	1000	629 J	1000 U		ug/l	V
PR79-WT-009-SW-01-F	N	Aluminum	300	120 J	300 U		ug/l	V
PR79-WT-009-SW-01-F	N	Iron	100	9.00 J	80.0 U		ug/l	V
PR79-WT-009-SW-01-F	N	Zinc	20.0	1.80 J	10.0 U		ug/l	V
PR79-WT-009-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-009-SW-01-F	N	Potassium	1000	668 J	1000 U		ug/l	V
PR79-WT-010-SW-01	N	Zinc	20.0	5.30 J	10.0 U		ug/l	V
PR79-WT-010-SW-01	N	Potassium	1000	840 J	1000 U		ug/l	V
PR79-WT-010-SW-01-F	N	Zinc	20.0	3.00 J	10.0 U		ug/l	V
PR79-WT-010-SW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-010-SW-01-F	N	Potassium	1000	914 J	1000 U		ug/l	V
PR79-WT-011-SW-01	N	Zinc	20.0	2.70 J	10.0 U		ug/l	V
PR79-WT-011-SW-01	N	Potassium	1000	830 J	1000 U		ug/l	V
PR79-WT-011-SW-01-F	N	Zinc	20.0	5.20 J	10.0 U		ug/l	V
PR79-WT-011-SW-01-F	N	Copper	25.0	3.80 J	10.0 U		ug/l	L/V
PR79-WT-011-SW-01-F	N	Potassium	1000	822 J	1000 U		ug/l	V
PR79-WT-012-SW-01	N	Zinc	20.0	1.70 J	10.0 U		ug/l	V
PR79-WT-012-SW-01	N	Potassium	1000	826 J	1000 U		ug/l	V
PR79-WT-012-SW-01-F	N	Zinc	20.0	3.70 J	10.0 U		ug/l	V
PR79-WT-012-SW-01-F	N	Copper	25.0	3.20 J	10.0 U		ug/l	L/V
PR79-WT-012-SW-01-F	N	Potassium	1000	956 J	1000 U		ug/l	V
PR79-WT-021-PW-01	N	Zinc	20.0	3.00 J	10.0 U		ug/l	V
PR79-WT-021-PW-01	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-021-SW-01	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-021-SW-01	N	Potassium	1000	330 J	500 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Aluminum	300	61.0 J	100 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Iron	100	65.1 J	80.0 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Zinc	20.0	2.40 J	10.0 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Copper	25.0	1.70 J	10.0 U		ug/l	L/V
PR79-WT-029-SW-01-F-R	N	Potassium	1000	507 J	1000 U		ug/l	V
PR79-WT-029-SW-01-R	N	Aluminum	300	150 J	300 U		ug/l	V
PR79-WT-029-SW-01-R	N	Zinc	20.0	1.80 J	10.0 U		ug/l	V
PR79-WT-029-SW-01-R	N	Potassium	1000	525 J	1000 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Aluminum	300	49.0 J	100 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Iron	100	73.1 J	80.0 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Zinc	20.0	2.50 J	10.0 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-030-SW-01-F-R	N	Potassium	1000	410 J	500 U		ug/l	V
PR79-WT-030-SW-01-R	N	Aluminum	300	75.0 J	100 U		ug/l	V

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-030-SW-01-R	N	Zinc	20.0	1.60 J	10.0 U		ug/l	V
PR79-WT-030-SW-01-R	N	Potassium	1000	446 J	500 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Aluminum	300	150 J	300 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Zinc	20.0	3.10 J	10.0 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Copper	25.0	2.20 J	10.0 U		ug/l	L/V
PR79-WT-031-SW-01-F-R	N	Potassium	1000	954 J	1000 U		ug/l	V
PR79-WT-031-SW-01-R	N	Zinc	20.0	3.70 J	10.0 U		ug/l	V
PR79-WT-031-SW-01-R	N	Potassium	1000	985 J	1000 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE19ICW2 (LB)	Barium	0.4800	< 0.23	< 5	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Copper	0.9800	< 0.63	< 25	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Magnesium	21.00	< 7.8	< 100	ug/l	None/None	L	
PBWNE19ICW2 (LB)	Sodium	29.00	< 24	< 1000	ug/l	None/None	L	
PBWNE22ICW1 (LB)	Zinc	0.7200	< 0.72	< 20	ug/l	None/None	L	
PBWNE22ICW1 (LB)	Copper	1.000	< 0.63	< 25	ug/l	None/None	L	
PBWNE22ICW1 (LB)	Sodium	32.00	< 24	< 1000	ug/l	None/None	L	
PBWNE22ICW1 (LB)	Potassium	50.00	< 41	< 1000	ug/l	None/None	L	
PBWNE22ICW1 (LB)	Iron	7.300	< 5.4	< 100	ug/l	None/None	L	
PBWNE22ICW1 (LB)	Magnesium	9.800	< 7.8	< 100	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01-F	N	Copper	25.0	1.20 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01-F	N	Iron	100	65.1 J	80.0 U		ug/l	L
PR79-WT-008-PW-01-F	N	Zinc	20.0	3.30 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Copper	25.0	0.900 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Iron	100	27.0 J	80.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Potassium	1000	439 J	500 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-009-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-010-SW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-011-SW-01-F	N	Copper	25.0	3.80 J	10.0 U		ug/l	L/V
PR79-WT-012-SW-01-F	N	Copper	25.0	3.20 J	10.0 U		ug/l	L/V
PR79-WT-029-SW-01-F-R	N	Copper	25.0	1.70 J	10.0 U		ug/l	L/V
PR79-WT-030-SW-01-F-R	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-031-SW-01-F-R	N	Copper	25.0	2.20 J	10.0 U		ug/l	L/V
SWBG-EB-01-01-F-R	EB	Barium	5.00	0.500 J	3.00 U		ug/l	L
SWBG-EB-01-01-F-R	EB	Copper	25.0	1.50 J	10.0 U		ug/l	L
SWBG-EB-01-01-F-R	EB	Magnesium	100	34.0 J	80.0 U		ug/l	L

Qualified Results associated with the Lab Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
SWBG-EB-01-01-F-R	EB	Sodium	1000	471 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE19ICS2 (LB)/ PBSNE19ICS2	Zinc	0.0007600	< 0.00052	< 0.0061	umoles/ g	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Chromium	0.04600	< 0.026	< 1	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Zinc	0.3500	< 0.17	< 2	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Aluminum	1.400	< 0.71	< 30	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Magnesium	1.600	< 0.68	< 10	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Iron	3.200	< 1.4	< 10	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Potassium	4.400	< 2.9	< 100	mg/kg	U/None	L	
PBSNE19ICS1 (LB)/ PBSNE19ICS1	Sodium	4.800	< 1.5	< 100	mg/kg	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	Sodium	240	166 J	240 U		mg/kg	L
PR79-WT-021-SD-01	N	Sodium	240	81.6 J	120 U		mg/kg	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)/ SN3763-29	Vanadium	0.3300	< 0.23	< 10	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Chromium	0.5100	< 0.36	< 10	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Barium	0.6600	< 0.23	< 5	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Copper	0.7000	< 0.63	< 25	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Zinc	1.100	< 0.72	< 20	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Calcium	165.0	< 11	< 100	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Magnesium	23.00	< 7.8	< 100	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Manganese	3.000	< 1.1	< 5	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Sodium	461.0	< 24	< 1000	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Iron	61.30	< 5.4	< 100	ug/l	U/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Aluminum	80.00	< 15	< 300	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Chromium	0.5100	< 0.36	< 10	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Barium	0.8900	< 0.23	< 5	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Zinc	1.200	< 0.72	< 20	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Copper	2.000	< 0.63	< 25	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Aluminum	27.00	< 15	< 300	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Magnesium	27.00	< 7.8	< 100	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Potassium	45.00	< 41	< 1000	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Sodium	453.0	< 24	< 1000	ug/l	U/None	V	
SWBG-EB-01-01-R (EB)/ SN3763-16	Calcium	99.00	< 11	< 100	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01	N	Aluminum	300	160 J	300 U		ug/l	V
PR79-WT-008-PW-01	N	Copper	25.0	1.00 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01-F	N	Copper	25.0	1.20 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01-F	N	Zinc	20.0	3.30 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Aluminum	300	95.0 J	100 U		ug/l	V
PR79-WT-008-SW-01	N	Potassium	1000	412 J	500 U		ug/l	L/V
PR79-WT-008-SW-01	N	Chromium	10.0	0.510 J	4.00 U		ug/l	V
PR79-WT-008-SW-01	N	Zinc	20.0	9.38 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Aluminum	300	94.0 J	100 U		ug/l	V
PR79-WT-008-SW-01-F	N	Potassium	1000	439 J	500 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Copper	25.0	0.900 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Iron	100	27.0 J	80.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-009-SW-01	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-009-SW-01	N	Potassium	1000	629 J	1000 U		ug/l	V
PR79-WT-009-SW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	V
PR79-WT-009-SW-01-F	N	Aluminum	300	120 J	300 U		ug/l	V
PR79-WT-009-SW-01-F	N	Potassium	1000	668 J	1000 U		ug/l	V
PR79-WT-009-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-009-SW-01-F	N	Iron	100	9.00 J	80.0 U		ug/l	V
PR79-WT-009-SW-01-F	N	Zinc	20.0	1.80 J	10.0 U		ug/l	V
PR79-WT-010-SW-01	N	Potassium	1000	840 J	1000 U		ug/l	V
PR79-WT-010-SW-01	N	Chromium	10.0	0.640 J	4.00 U		ug/l	V
PR79-WT-010-SW-01	N	Zinc	20.0	5.30 J	10.0 U		ug/l	V
PR79-WT-010-SW-01-F	N	Potassium	1000	914 J	1000 U		ug/l	V
PR79-WT-010-SW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-010-SW-01-F	N	Zinc	20.0	3.00 J	10.0 U		ug/l	V
PR79-WT-011-SW-01	N	Potassium	1000	830 J	1000 U		ug/l	V
PR79-WT-011-SW-01	N	Chromium	10.0	0.420 J	4.00 U		ug/l	V
PR79-WT-011-SW-01	N	Zinc	20.0	2.70 J	10.0 U		ug/l	V
PR79-WT-011-SW-01-F	N	Potassium	1000	822 J	1000 U		ug/l	V
PR79-WT-011-SW-01-F	N	Copper	25.0	3.80 J	10.0 U		ug/l	L/V
PR79-WT-011-SW-01-F	N	Zinc	20.0	5.20 J	10.0 U		ug/l	V
PR79-WT-012-SW-01	N	Potassium	1000	826 J	1000 U		ug/l	V
PR79-WT-012-SW-01	N	Chromium	10.0	0.430 J	4.00 U		ug/l	V
PR79-WT-012-SW-01	N	Zinc	20.0	1.70 J	10.0 U		ug/l	V
PR79-WT-012-SW-01-F	N	Potassium	1000	956 J	1000 U		ug/l	V
PR79-WT-012-SW-01-F	N	Copper	25.0	3.20 J	10.0 U		ug/l	L/V
PR79-WT-012-SW-01-F	N	Zinc	20.0	3.70 J	10.0 U		ug/l	V
PR79-WT-021-PW-01	N	Chromium	10.0	1.30 J	4.00 U		ug/l	V
PR79-WT-021-PW-01	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-021-PW-01	N	Zinc	20.0	3.00 J	10.0 U		ug/l	V
PR79-WT-021-SW-01	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-021-SW-01	N	Potassium	1000	330 J	500 U		ug/l	V

Qualified Results associated with the Equipment Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-029-SW-01-F-R	N	Aluminum	300	61.0 J	100 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Potassium	1000	507 J	1000 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Copper	25.0	1.70 J	10.0 U		ug/l	L/V
PR79-WT-029-SW-01-F-R	N	Iron	100	65.1 J	80.0 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Zinc	20.0	2.40 J	10.0 U		ug/l	V
PR79-WT-029-SW-01-R	N	Aluminum	300	150 J	300 U		ug/l	V
PR79-WT-029-SW-01-R	N	Potassium	1000	525 J	1000 U		ug/l	V
PR79-WT-029-SW-01-R	N	Zinc	20.0	1.80 J	10.0 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Aluminum	300	49.0 J	100 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Potassium	1000	410 J	500 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-030-SW-01-F-R	N	Iron	100	73.1 J	80.0 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Zinc	20.0	2.50 J	10.0 U		ug/l	V
PR79-WT-030-SW-01-R	N	Aluminum	300	75.0 J	100 U		ug/l	V
PR79-WT-030-SW-01-R	N	Potassium	1000	446 J	500 U		ug/l	V
PR79-WT-030-SW-01-R	N	Zinc	20.0	1.60 J	10.0 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Aluminum	300	150 J	300 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Potassium	1000	954 J	1000 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Copper	25.0	2.20 J	10.0 U		ug/l	L/V
PR79-WT-031-SW-01-F-R	N	Zinc	20.0	3.10 J	10.0 U		ug/l	V
PR79-WT-031-SW-01-R	N	Potassium	1000	985 J	1000 U		ug/l	V
PR79-WT-031-SW-01-R	N	Zinc	20.0	3.70 J	10.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Barium	0.4800	< 0.23	< 5	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Copper	0.9800	< 0.63	< 25	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Magnesium	21.00	< 7.8	< 100	ug/l	U/None	L	
PBWNE19ICW2 (LB)/ PBWNE19ICW2	Sodium	29.00	< 24	< 1000	ug/l	U/None	L	
PBWNE22ICW1 (LB)/ PBWNE22ICW1	Zinc	0.7200	< 0.72	< 20	ug/l	U/None	L	
PBWNE22ICW1 (LB)/ PBWNE22ICW1	Copper	1.000	< 0.63	< 25	ug/l	U/None	L	
PBWNE22ICW1 (LB)/ PBWNE22ICW1	Sodium	32.00	< 24	< 1000	ug/l	U/None	L	
PBWNE22ICW1 (LB)/ PBWNE22ICW1	Potassium	50.00	< 41	< 1000	ug/l	U/None	L	
PBWNE22ICW1 (LB)/ PBWNE22ICW1	Iron	7.300	< 5.4	< 100	ug/l	U/None	L	
PBWNE22ICW1 (LB)/ PBWNE22ICW1	Magnesium	9.800	< 7.8	< 100	ug/l	U/None	L	
PBWNE27ICW1 (LB)/ PBWNE27ICW1	Vanadium	0.7400	< 0.23	< 10	ug/l	U/None	L	
PBWNE27ICW1 (LB)/ PBWNE27ICW1	Iron	12.00	< 5.4	< 100	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01	EB	Iron	100	61.3 J	80.0 U		ug/l	L
EB-03-PW-01	EB	Vanadium	10.0	0.330 J	4.00 U		ug/l	L
PR79-WT-008-PW-01	N	Copper	25.0	1.00 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01	N	Potassium	1000	978 J	1000 U		ug/l	L
PR79-WT-008-PW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	L
PR79-WT-008-SW-01	N	Potassium	1000	412 J	500 U		ug/l	L/V
PR79-WT-008-SW-01	N	Zinc	20.0	9.38 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Iron	100	26.0 J	80.0 U		ug/l	L
PR79-WT-009-SW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	L
PR79-WT-010-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	L
PR79-WT-011-SW-01	N	Copper	25.0	2.30 J	10.0 U		ug/l	L
PR79-WT-012-SW-01	N	Copper	25.0	1.60 J	10.0 U		ug/l	L
PR79-WT-021-PW-01	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V

Qualified Results associated with the Lab Blank for SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-021-SW-01	N	Copper	25.0	1.50 J	10.0 U		ug/l	L
PR79-WT-029-SW-01-R	N	Copper	25.0	2.00 J	10.0 U		ug/l	L
PR79-WT-030-SW-01-R	N	Copper	25.0	1.60 J	10.0 U		ug/l	L
PR79-WT-031-SW-01-R	N	Copper	25.0	2.00 J	10.0 U		ug/l	L
SWBG-EB-01-01-R	EB	Barium	5.00	0.890 J	3.00 U		ug/l	L
SWBG-EB-01-01-R	EB	Copper	25.0	2.00 J	10.0 U		ug/l	L
SWBG-EB-01-01-R	EB	Magnesium	100	27.0 J	80.0 U		ug/l	L
SWBG-EB-01-01-R	EB	Sodium	1000	453 J	500 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01-F (EB)/ SN3763-30	Lead	0.08400	< 0.075	< 1	ug/l	None/None	V	
EB-03-PW-01-F (EB)/ SN3763-30	Cobalt	0.1300	< 0.06	< 1	ug/l	None/None	V	
EB-03-PW-01-F (EB)/ SN3763-30	Beryllium	0.06800	< 0.034	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01	N	Cobalt	1.00	0.350 J	1.00 U		ug/l	V
PR79-WT-008-PW-01-F	N	Cobalt	1.00	0.430 J	1.00 U		ug/l	V
PR79-WT-008-SW-01-F	N	Beryllium	1.00	0.0730 J	0.200 U		ug/l	L/V
PR79-WT-021-PW-01	N	Beryllium	1.00	0.0720 J	0.200 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE22IMW1 (LB)	Beryllium	0.06000	< 0.034	< 1	ug/l	None/None	L	
PBWNE27IMW1 (LB)	Beryllium	0.05700	< 0.034	< 1	ug/l	None/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01-F	EB	Beryllium	1.00	0.0680 J	0.200 U		ug/l	L
PR79-WT-008-PW-01-F	N	Beryllium	1.00	0.0670 J	0.200 U		ug/l	L
PR79-WT-008-SW-01-F	N	Beryllium	1.00	0.0730 J	0.200 U		ug/l	L/V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Dissolved, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSWNE19IMW2 (BS)	Arsenic	116.8	84 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Thallium	117.5	82 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Silver	119.4	85 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)	Cadmium	214.4	87 - 115	40 - 150	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-010-SW-01-F	N	Cadmium	1.00	0.0330 J	0.0330 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)	Cadmium	0.04000	< 0.029	< 1	ug/l	None/None	V	
EB-03-PW-01 (EB)	Thallium	0.1000	< 0.06	< 1	ug/l	None/None	V	
EB-03-PW-01 (EB)	Antimony	0.1700	< 0.055	< 1	ug/l	None/None	V	
EB-03-PW-01 (EB)	Selenium	0.2000	< 0.19	< 5	ug/l	None/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-021-PW-01	N	Cadmium	1.00	0.0480 J	0.200 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)/ SN3763-29	Cobalt	0.2100	< 0.06	< 1	ug/l	None/None	V	
EB-03-PW-01 (EB)/ SN3763-29	Lead	0.4000	< 0.075	< 1	ug/l	None/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01	N	Cobalt	1.00	0.350 J	1.00 U		ug/l	V
PR79-WT-008-PW-01-F	N	Cobalt	1.00	0.430 J	1.00 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PBWNE22IMW1 (LB)/ PBWNE22IMW1	Beryllium	0.06000	< 0.034	< 1	ug/l	U/None	L	
PBWNE27IMW1 (LB)/ PBWNE27IMW1	Beryllium	0.05700	< 0.034	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01	EB	Beryllium	1.00	0.160 J	0.200 U		ug/l	L
PR79-WT-008-PW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-008-SW-01	N	Beryllium	1.00	0.170 J	0.200 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6020A, Total, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Arsenic	117.0	84 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Thallium	118.0	82 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Silver	119.4	85 - 116	40 - 150	percent	J/None	C	
LCSWNE19IMW2 (BS)/ LCSWNE19IMW2	Cadmium	124.4	87 - 115	40 - 150	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-011-SW-01	N	Cadmium	1.00	0.0420 J	0.0420 J	+	ug/l	C/TR
PR79-WT-029-SW-01-R	N	Cadmium	1.00	0.0590 J	0.0590 J	+	ug/l	C/TR
PR79-WT-030-SW-01-R	N	Cadmium	1.00	0.0730 J	0.0730 J	+	ug/l	C/TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01-F (EB)/ SN3763-30	Mercury	0.05200	< 0.013	< 0.2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01-F	N	Mercury	0.200	0.0390 JB	0.100 U		ug/l	V
PR79-WT-021-PW-01	N	Mercury	0.200	0.0280 JB	0.100 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW7470A, Total, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)/ SN3763-29	Mercury	0.04600	< 0.013	< 0.2	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Equipment Blank for SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01-F	N	Mercury	0.200	0.0390 JB	0.100 U		ug/l	V
PR79-WT-021-PW-01	N	Mercury	0.200	0.0280 JB	0.100 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260C, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)/ SN3763-29	Toluene	0.4200	< 0.27	< 1	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-01-PW-01 (TB)/ SN3763-15	Methylene chloride	1.500	< 1.1	< 5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260C, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-06-SD-01 (TB)/ SN3763-18	Toluene	0.006500	< 0.0014	< 0.005	mg/kg	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9045D, Prep Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of extraction found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-008-SD-01 (N)/ SN3763-23		116.3	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL
PR79-WT-021-SD-01 (N)/ SN3763-27		114.8	< 0	< 0	hours	J/X	H2	Prep Exceeds UCL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Prep Hold Time for SW9045D

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	pH	0.100	5.80	5.80 J	-	ph units	H2
PR79-WT-021-SD-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method VOCSIMC, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
EB-03-PW-01 (EB)/ SN3763-29	Benzene	0.01100	< 0.009	< 0.05	ug/l	U/None	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-021-PW-01 (N)/ SN3763-26	1,2-Dichloroethane-d4	131.0	70 - 130	10 - 130	percent	J/None	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method VOCSIMC, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
PR79-WT-008-SW-01 (N)/ SN3763-19		14.02	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM	Extraction Method: SW3520							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01	EB	Chrysene	0.190	0.0540 J	0.0950 U		ug/l	L
PR79-WT-008-PW-01	N	Chrysene	0.200	0.0520 J	0.100 U		ug/l	L
PR79-WT-008-SW-01	N	Chrysene	0.190	0.0450 J	0.0930 U		ug/l	L
PR79-WT-009-SW-01	N	Pentachlorophenol	0.960	0.480 U	0.480 R		ug/l	I
PR79-WT-009-SW-01	N	Chrysene	0.190	0.0420 J	0.0960 U		ug/l	L
PR79-WT-010-SW-01	N	Pentachlorophenol	1.00	0.500 U	0.500 R		ug/l	I
PR79-WT-010-SW-01	N	Chrysene	0.200	0.0500 J	0.100 U		ug/l	L
PR79-WT-012-SW-01	N	Benzo(a)anthracene	0.200	0.0480 J	0.100 U		ug/l	L
PR79-WT-012-SW-01	N	Chrysene	0.200	0.0750 J	0.100 U		ug/l	L
PR79-WT-012-SW-01	N	Pyrene	0.200	0.0630 JB	0.100 U		ug/l	L
PR79-WT-021-PW-01	N	Chrysene	0.200	0.0580 J	0.100 U		ug/l	L
PR79-WT-021-SW-01	N	Chrysene	0.190	0.0520 J	0.0960 U		ug/l	L
PR79-WT-029-SW-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 R		ug/l	I
PR79-WT-031-SW-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 R		ug/l	I
PR79-WT-031-SW-01-R	N	Chrysene	0.190	0.0580 J	0.0940 U		ug/l	L
SWBG-EB-01-01-R	EB	Pentachlorophenol	0.930	0.470 U	0.470 R		ug/l	I
SWBG-EB-01-01-R	EB	Chrysene	0.190	0.0520 J	0.0930 U		ug/l	L

Test Method: BNASIM	Extraction Method: SW3550							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	Chrysene	0.0560	0.0360 J	0.0560 U		mg/kg	L
PR79-WT-008-SD-01	N	1,4-Dioxane (p-Dioxane)	0.280	0.140 UL	0.140 UJ		mg/kg	C
PR79-WT-008-SD-01	N	Benzo(b)fluoranthene	0.0560	0.0440 JL	0.0440 J	-	mg/kg	C/TR
PR79-WT-021-SD-01	N	1,4-Dioxane (p-Dioxane)	0.320	0.0100 J	0.0100 J	-	mg/kg	C/I/TR
PR79-WT-021-SD-01	N	2-Methylnaphthalene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Acenaphthene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Acenaphthylene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Anthracene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Benzo(a)anthracene	0.0640	0.0110 J	0.0110 J	-	mg/kg	I/TR
PR79-WT-021-SD-01	N	Benzo(a)pyrene	0.0640	0.0940	0.0940 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Benzo(b)fluoranthene	0.0640	0.200	0.200 J	-	mg/kg	C/I
PR79-WT-021-SD-01	N	Benzo(g,h,i)perylene	0.0640	0.120	0.120 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Benzo(k)fluoranthene	0.0640	0.0770	0.0770 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Dibenz(a,h)anthracene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Fluoranthene	0.0640	0.0280 J	0.0280 J	-	mg/kg	I/TR
PR79-WT-021-SD-01	N	Fluorene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Indeno(1,2,3-c,d)pyrene	0.0640	0.0910	0.0910 J	-	mg/kg	I
PR79-WT-021-SD-01	N	Naphthalene	0.0640	0.0320 U	0.0320 UJ		mg/kg	I
PR79-WT-021-SD-01	N	Phenanthrene	0.0640	0.0210 J	0.0210 J	-	mg/kg	I/TR
PR79-WT-021-SD-01	N	Pyrene	0.0640	0.0190 J	0.0190 J	-	mg/kg	I/TR

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3550

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-021-SD-01	N	Chrysene	0.0640	0.0230 J	0.0320 UJ		mg/kg	L/I

Test Method: SW6010C Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01-F	N	Copper	25.0	1.20 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01-F	N	Iron	100	65.1 J	80.0 U		ug/l	L
PR79-WT-008-PW-01-F	N	Zinc	20.0	3.30 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Copper	25.0	0.900 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Aluminum	300	94.0 J	100 U		ug/l	V
PR79-WT-008-SW-01-F	N	Iron	100	27.0 J	80.0 U		ug/l	L/V
PR79-WT-008-SW-01-F	N	Potassium	1000	439 J	500 U		ug/l	L/V
PR79-WT-009-SW-01-F	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-009-SW-01-F	N	Aluminum	300	120 J	300 U		ug/l	V
PR79-WT-009-SW-01-F	N	Iron	100	9.00 J	80.0 U		ug/l	V
PR79-WT-009-SW-01-F	N	Zinc	20.0	1.80 J	10.0 U		ug/l	V
PR79-WT-009-SW-01-F	N	Potassium	1000	668 J	1000 U		ug/l	V
PR79-WT-010-SW-01-F	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-010-SW-01-F	N	Zinc	20.0	3.00 J	10.0 U		ug/l	V
PR79-WT-010-SW-01-F	N	Potassium	1000	914 J	1000 U		ug/l	V
PR79-WT-011-SW-01-F	N	Copper	25.0	3.80 J	10.0 U		ug/l	L/V
PR79-WT-011-SW-01-F	N	Zinc	20.0	5.20 J	10.0 U		ug/l	V
PR79-WT-011-SW-01-F	N	Potassium	1000	822 J	1000 U		ug/l	V
PR79-WT-012-SW-01-F	N	Copper	25.0	3.20 J	10.0 U		ug/l	L/V
PR79-WT-012-SW-01-F	N	Zinc	20.0	3.70 J	10.0 U		ug/l	V
PR79-WT-012-SW-01-F	N	Potassium	1000	956 J	1000 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Copper	25.0	1.70 J	10.0 U		ug/l	L/V
PR79-WT-029-SW-01-F-R	N	Aluminum	300	61.0 J	100 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Iron	100	65.1 J	80.0 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Zinc	20.0	2.40 J	10.0 U		ug/l	V
PR79-WT-029-SW-01-F-R	N	Potassium	1000	507 J	1000 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Copper	25.0	2.40 J	10.0 U		ug/l	L/V
PR79-WT-030-SW-01-F-R	N	Aluminum	300	49.0 J	100 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Iron	100	73.1 J	80.0 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Zinc	20.0	2.50 J	10.0 U		ug/l	V
PR79-WT-030-SW-01-F-R	N	Potassium	1000	410 J	500 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Copper	25.0	2.20 J	10.0 U		ug/l	L/V
PR79-WT-031-SW-01-F-R	N	Aluminum	300	150 J	300 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Zinc	20.0	3.10 J	10.0 U		ug/l	V
PR79-WT-031-SW-01-F-R	N	Potassium	1000	954 J	1000 U		ug/l	V
SWBG-EB-01-01-F-R	EB	Barium	5.00	0.500 J	3.00 U		ug/l	L
SWBG-EB-01-01-F-R	EB	Copper	25.0	1.50 J	10.0 U		ug/l	L

Table of All Qualified Results

Test Method: SW6010C	Extraction Method: Dissolved							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
SWBG-EB-01-01-F-R	EB	Magnesium	100	34.0 J	80.0 U		ug/l	L
SWBG-EB-01-01-F-R	EB	Sodium	1000	471 J	500 U		ug/l	L

Test Method: SW6010C	Extraction Method: SW3050B							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	Sodium	240	166 J	240 U		mg/kg	L
PR79-WT-021-SD-01	N	Sodium	240	81.6 J	120 U		mg/kg	L

Test Method: SW6010C	Extraction Method: Total							
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01	EB	Iron	100	61.3 J	80.0 U		ug/l	L
EB-03-PW-01	EB	Vanadium	10.0	0.330 J	4.00 U		ug/l	L
PR79-WT-008-PW-01	N	Potassium	1000	978 J	1000 U		ug/l	L
PR79-WT-008-PW-01	N	Aluminum	300	160 J	300 U		ug/l	V
PR79-WT-008-PW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	L/V
PR79-WT-008-PW-01	N	Copper	25.0	1.00 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	L
PR79-WT-008-SW-01	N	Iron	100	26.0 J	80.0 U		ug/l	L
PR79-WT-008-SW-01	N	Aluminum	300	95.0 J	100 U		ug/l	V
PR79-WT-008-SW-01	N	Zinc	20.0	9.38 J	10.0 U		ug/l	L/V
PR79-WT-008-SW-01	N	Chromium	10.0	0.510 J	4.00 U		ug/l	V
PR79-WT-008-SW-01	N	Potassium	1000	412 J	500 U		ug/l	L/V
PR79-WT-009-SW-01	N	Copper	25.0	1.90 J	10.0 U		ug/l	L
PR79-WT-009-SW-01	N	Aluminum	300	140 J	300 U		ug/l	V
PR79-WT-009-SW-01	N	Zinc	20.0	2.00 J	10.0 U		ug/l	V
PR79-WT-009-SW-01	N	Potassium	1000	629 J	1000 U		ug/l	V
PR79-WT-010-SW-01	N	Copper	25.0	1.40 J	10.0 U		ug/l	L
PR79-WT-010-SW-01	N	Zinc	20.0	5.30 J	10.0 U		ug/l	V
PR79-WT-010-SW-01	N	Chromium	10.0	0.640 J	4.00 U		ug/l	V
PR79-WT-010-SW-01	N	Potassium	1000	840 J	1000 U		ug/l	V
PR79-WT-011-SW-01	N	Copper	25.0	2.30 J	10.0 U		ug/l	L
PR79-WT-011-SW-01	N	Zinc	20.0	2.70 J	10.0 U		ug/l	V
PR79-WT-011-SW-01	N	Chromium	10.0	0.420 J	4.00 U		ug/l	V
PR79-WT-011-SW-01	N	Potassium	1000	830 J	1000 U		ug/l	V
PR79-WT-012-SW-01	N	Copper	25.0	1.60 J	10.0 U		ug/l	L
PR79-WT-012-SW-01	N	Zinc	20.0	1.70 J	10.0 U		ug/l	V
PR79-WT-012-SW-01	N	Chromium	10.0	0.430 J	4.00 U		ug/l	V
PR79-WT-012-SW-01	N	Potassium	1000	826 J	1000 U		ug/l	V
PR79-WT-021-PW-01	N	Zinc	20.0	3.00 J	10.0 U		ug/l	V
PR79-WT-021-PW-01	N	Chromium	10.0	1.30 J	4.00 U		ug/l	V
PR79-WT-021-PW-01	N	Copper	25.0	1.60 J	10.0 U		ug/l	L/V
PR79-WT-021-SW-01	N	Copper	25.0	1.50 J	10.0 U		ug/l	L
PR79-WT-021-SW-01	N	Aluminum	300	140 J	300 U		ug/l	V

Table of All Qualified Results

Test Method: SW6010C Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-021-SW-01	N	Potassium	1000	330 J	500 U		ug/l	V
PR79-WT-029-SW-01-R	N	Copper	25.0	2.00 J	10.0 U		ug/l	L
PR79-WT-029-SW-01-R	N	Aluminum	300	150 J	300 U		ug/l	V
PR79-WT-029-SW-01-R	N	Zinc	20.0	1.80 J	10.0 U		ug/l	V
PR79-WT-029-SW-01-R	N	Potassium	1000	525 J	1000 U		ug/l	V
PR79-WT-030-SW-01-R	N	Copper	25.0	1.60 J	10.0 U		ug/l	L
PR79-WT-030-SW-01-R	N	Aluminum	300	75.0 J	100 U		ug/l	V
PR79-WT-030-SW-01-R	N	Zinc	20.0	1.60 J	10.0 U		ug/l	V
PR79-WT-030-SW-01-R	N	Potassium	1000	446 J	500 U		ug/l	V
PR79-WT-031-SW-01-R	N	Copper	25.0	2.00 J	10.0 U		ug/l	L
PR79-WT-031-SW-01-R	N	Zinc	20.0	3.70 J	10.0 U		ug/l	V
PR79-WT-031-SW-01-R	N	Potassium	1000	985 J	1000 U		ug/l	V
SWBG-EB-01-01-R	EB	Barium	5.00	0.890 J	3.00 U		ug/l	L
SWBG-EB-01-01-R	EB	Copper	25.0	2.00 J	10.0 U		ug/l	L
SWBG-EB-01-01-R	EB	Magnesium	100	27.0 J	80.0 U		ug/l	L
SWBG-EB-01-01-R	EB	Sodium	1000	453 J	500 U		ug/l	L

Test Method: SW6020A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01-F	EB	Beryllium	1.00	0.0680 J	0.200 U		ug/l	L
PR79-WT-008-PW-01-F	N	Beryllium	1.00	0.0670 J	0.200 U		ug/l	L
PR79-WT-008-PW-01-F	N	Cobalt	1.00	0.430 J	1.00 U		ug/l	V
PR79-WT-008-SW-01-F	N	Beryllium	1.00	0.0730 J	0.200 U		ug/l	L/V
PR79-WT-010-SW-01-F	N	Cadmium	1.00	0.0330 J	0.0330 J	+	ug/l	C/TR

Test Method: SW6020A Extraction Method: Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
EB-03-PW-01	EB	Beryllium	1.00	0.160 J	0.200 U		ug/l	L
PR79-WT-008-PW-01	N	Beryllium	1.00	0.100 J	0.200 U		ug/l	L
PR79-WT-008-PW-01	N	Cobalt	1.00	0.350 J	1.00 U		ug/l	V
PR79-WT-008-SW-01	N	Beryllium	1.00	0.170 J	0.200 U		ug/l	L
PR79-WT-011-SW-01	N	Cadmium	1.00	0.0420 J	0.0420 J	+	ug/l	C/TR
PR79-WT-021-PW-01	N	Cadmium	1.00	0.0480 J	0.200 U		ug/l	V
PR79-WT-021-PW-01	N	Beryllium	1.00	0.0720 J	0.200 U		ug/l	V
PR79-WT-029-SW-01-R	N	Cadmium	1.00	0.0590 J	0.0590 J	+	ug/l	C/TR
PR79-WT-030-SW-01-R	N	Cadmium	1.00	0.0730 J	0.0730 J	+	ug/l	C/TR

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-PW-01-F	N	Mercury	0.200	0.0390 JB	0.100 U		ug/l	V

Test Method: SW7470A Extraction Method: Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-021-PW-01	N	Mercury	0.200	0.0280 JB	0.100 U		ug/l	V

Table of All Qualified Results

Test Method: SW9045D Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
PR79-WT-008-SD-01	N	pH	0.100	5.80	5.80 J	-	ph units	H2
PR79-WT-021-SD-01	N	pH	0.100	5.70	5.70 J	-	ph units	H2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-009-SW-01	N	Pentachlorophenol	0.960	0.480 U	0.480 X	0.480 R	I
PR79-WT-010-SW-01	N	Pentachlorophenol	1.00	0.500 U	0.500 X	0.500 R	I
PR79-WT-029-SW-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 X	0.470 R	I
PR79-WT-031-SW-01-R	N	Pentachlorophenol	0.940	0.470 U	0.470 X	0.470 R	I
SWBG-EB-01-01-R	EB	Pentachlorophenol	0.930	0.470 U	0.470 X	0.470 R	I

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-008-PW-01-F	N	Copper	25.0	1.20 J	1.20 J	10.0 U	L/V
PR79-WT-008-PW-01-F	N	Iron	100	65.1 J	65.1 J	80.0 U	L
PR79-WT-008-PW-01-F	N	Zinc	20.0	3.30 J	3.30 J	10.0 U	L/V
PR79-WT-008-SW-01-F	N	Aluminum	300	94.0 J	94.0 J	100 U	V
PR79-WT-008-SW-01-F	N	Copper	25.0	0.900 J	0.900 J	10.0 U	L/V
PR79-WT-008-SW-01-F	N	Iron	100	27.0 J	27.0 J	80.0 U	L/V
PR79-WT-008-SW-01-F	N	Potassium	1000	439 J	439 J	500 U	L/V
PR79-WT-008-SW-01-F	N	Zinc	20.0	2.00 J	2.00 J	10.0 U	L/V
PR79-WT-009-SW-01-F	N	Aluminum	300	120 J	120 J	300 U	V
PR79-WT-009-SW-01-F	N	Copper	25.0	2.40 J	2.40 J	10.0 U	L/V
PR79-WT-009-SW-01-F	N	Iron	100	9.00 J	9.00 J	80.0 U	V
PR79-WT-009-SW-01-F	N	Potassium	1000	668 J	668 J	1000 U	V
PR79-WT-009-SW-01-F	N	Zinc	20.0	1.80 J	1.80 J	10.0 U	V
PR79-WT-010-SW-01-F	N	Copper	25.0	1.60 J	1.60 J	10.0 U	L/V
PR79-WT-010-SW-01-F	N	Potassium	1000	914 J	914 J	1000 U	V
PR79-WT-010-SW-01-F	N	Zinc	20.0	3.00 J	3.00 J	10.0 U	V
PR79-WT-011-SW-01-F	N	Copper	25.0	3.80 J	3.80 J	10.0 U	L/V
PR79-WT-011-SW-01-F	N	Potassium	1000	822 J	822 J	1000 U	V
PR79-WT-011-SW-01-F	N	Zinc	20.0	5.20 J	5.20 J	10.0 U	V
PR79-WT-012-SW-01-F	N	Copper	25.0	3.20 J	3.20 J	10.0 U	L/V
PR79-WT-012-SW-01-F	N	Potassium	1000	956 J	956 J	1000 U	V
PR79-WT-012-SW-01-F	N	Zinc	20.0	3.70 J	3.70 J	10.0 U	V
PR79-WT-029-SW-01-F-R	N	Aluminum	300	61.0 J	61.0 J	100 U	V
PR79-WT-029-SW-01-F-R	N	Copper	25.0	1.70 J	1.70 J	10.0 U	L/V
PR79-WT-029-SW-01-F-R	N	Iron	100	65.1 J	65.1 J	80.0 U	V
PR79-WT-029-SW-01-F-R	N	Potassium	1000	507 J	507 J	1000 U	V
PR79-WT-029-SW-01-F-R	N	Zinc	20.0	2.40 J	2.40 J	10.0 U	V
PR79-WT-030-SW-01-F-R	N	Aluminum	300	49.0 J	49.0 J	100 U	V
PR79-WT-030-SW-01-F-R	N	Copper	25.0	2.40 J	2.40 J	10.0 U	L/V
PR79-WT-030-SW-01-F-R	N	Iron	100	73.1 J	73.1 J	80.0 U	V
PR79-WT-030-SW-01-F-R	N	Potassium	1000	410 J	410 J	500 U	V
PR79-WT-030-SW-01-F-R	N	Zinc	20.0	2.50 J	2.50 J	10.0 U	V
PR79-WT-031-SW-01-F-R	N	Aluminum	300	150 J	150 J	300 U	V

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-031-SW-01-F-R	N	Copper	25.0	2.20 J	2.20 J	10.0 U	L/V
PR79-WT-031-SW-01-F-R	N	Potassium	1000	954 J	954 J	1000 U	V
PR79-WT-031-SW-01-F-R	N	Zinc	20.0	3.10 J	3.10 J	10.0 U	V
SWBG-EB-01-01-F-R	EB	Barium	5.00	0.500 J	0.500 J	3.00 U	L
SWBG-EB-01-01-F-R	EB	Copper	25.0	1.50 J	1.50 J	10.0 U	L
SWBG-EB-01-01-F-R	EB	Magnesium	100	34.0 J	34.0 J	80.0 U	L
SWBG-EB-01-01-F-R	EB	Sodium	1000	471 J	471 J	500 U	L

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-008-PW-01	N	Aluminum	300	160 J	160 J	300 U	V
PR79-WT-008-PW-01	N	Copper	25.0	1.00 J	10.0 U	10.0 U	L/V
PR79-WT-008-PW-01	N	Zinc	20.0	2.00 J	10.0 U	10.0 U	L/V
PR79-WT-008-SW-01	N	Aluminum	300	95.0 J	95.0 J	100 U	V
PR79-WT-008-SW-01	N	Chromium	10.0	0.510 J	0.510 J	4.00 U	V
PR79-WT-008-SW-01	N	Potassium	1000	412 J	500 U	500 U	L/V
PR79-WT-008-SW-01	N	Zinc	20.0	9.38 J	10.0 U	10.0 U	L/V
PR79-WT-009-SW-01	N	Aluminum	300	140 J	140 J	300 U	V
PR79-WT-009-SW-01	N	Potassium	1000	629 J	629 J	1000 U	V
PR79-WT-009-SW-01	N	Zinc	20.0	2.00 J	2.00 J	10.0 U	V
PR79-WT-010-SW-01	N	Chromium	10.0	0.640 J	0.640 J	4.00 U	V
PR79-WT-010-SW-01	N	Potassium	1000	840 J	840 J	1000 U	V
PR79-WT-010-SW-01	N	Zinc	20.0	5.30 J	5.30 J	10.0 U	V
PR79-WT-011-SW-01	N	Chromium	10.0	0.420 J	0.420 J	4.00 U	V
PR79-WT-011-SW-01	N	Potassium	1000	830 J	830 J	1000 U	V
PR79-WT-011-SW-01	N	Zinc	20.0	2.70 J	2.70 J	10.0 U	V
PR79-WT-012-SW-01	N	Chromium	10.0	0.430 J	0.430 J	4.00 U	V
PR79-WT-012-SW-01	N	Potassium	1000	826 J	826 J	1000 U	V
PR79-WT-012-SW-01	N	Zinc	20.0	1.70 J	1.70 J	10.0 U	V
PR79-WT-021-PW-01	N	Chromium	10.0	1.30 J	1.30 J	4.00 U	V
PR79-WT-021-PW-01	N	Copper	25.0	1.60 J	10.0 U	10.0 U	L/V
PR79-WT-021-PW-01	N	Zinc	20.0	3.00 J	3.00 J	10.0 U	V
PR79-WT-021-SW-01	N	Aluminum	300	140 J	140 J	300 U	V
PR79-WT-021-SW-01	N	Potassium	1000	330 J	330 J	500 U	V
PR79-WT-029-SW-01-R	N	Aluminum	300	150 J	150 J	300 U	V
PR79-WT-029-SW-01-R	N	Potassium	1000	525 J	525 J	1000 U	V
PR79-WT-029-SW-01-R	N	Zinc	20.0	1.80 J	1.80 J	10.0 U	V
PR79-WT-030-SW-01-R	N	Aluminum	300	75.0 J	75.0 J	100 U	V
PR79-WT-030-SW-01-R	N	Potassium	1000	446 J	446 J	500 U	V
PR79-WT-030-SW-01-R	N	Zinc	20.0	1.60 J	1.60 J	10.0 U	V
PR79-WT-031-SW-01-R	N	Potassium	1000	985 J	985 J	1000 U	V

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW6010C, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-031-SW-01-R	N	Zinc	20.0	3.70 J	3.70 J	10.0 U	V

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
EB-03-PW-01-F	EB	Beryllium	1.00	0.0680 J	0.0680 J	0.200 U	L
PR79-WT-008-PW-01-F	N	Beryllium	1.00	0.0670 J	0.0670 J	0.200 U	L
PR79-WT-008-PW-01-F	N	Cobalt	1.00	0.430 J	0.430 J	1.00 U	V
PR79-WT-008-SW-01-F	N	Beryllium	1.00	0.0730 J	0.0730 J	0.200 U	L/V

Modified Qualifiers for test method SW6020A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-008-PW-01	N	Cobalt	1.00	0.350 J	0.350 J	1.00 U	V
PR79-WT-008-PW-01	N	Selenium	5.00	3.00 U	3.00 U	3.00	
PR79-WT-021-PW-01	N	Beryllium	1.00	0.0720 J	0.0720 J	0.200 U	V
PR79-WT-021-PW-01	N	Cadmium	1.00	0.0480 J	0.0480 J	0.200 U	V
PR79-WT-031-SW-01-R	N	Cadmium	1.00	0.200 U	0.200 U	0.200	

Modified Qualifiers for test method SW7470A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-008-PW-01-F	N	Mercury	0.200	0.0390 JB	0.0390 J	0.100 U	V

Modified Qualifiers for test method SW7470A, Total

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-021-PW-01	N	Mercury	0.200	0.0280 JB	0.0280 J	0.100 U	V

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-021-SD-01	N	1,1,1-Trichloroethane	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,1-Dichloroethane	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,1-Dichloroethene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,2,3-Trichlorobenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,2,4-Trichlorobenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,2,4-Trimethylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,2-Dichlorobenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,3,5-Trimethylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	1,3-Dichlorobenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	2-Butanone (MEK)	0.110	0.0550 U	0.0550 UJ	0.0550 U	
PR79-WT-021-SD-01	N	4-Methyl-2-pentanone (MIBK)	0.110	0.0550 U	0.0550 UJ	0.0550 U	
PR79-WT-021-SD-01	N	Acetone	0.110	0.0790 J	0.0790 J	0.0790 J	TR
PR79-WT-021-SD-01	N	Benzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Bromodichloromethane	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Bromomethane	0.0440	0.0220 U	0.0220 UJ	0.0220 U	
PR79-WT-021-SD-01	N	Carbon disulfide	0.0220	0.0110 U	0.0110 UJ	0.0110 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260C

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-021-SD-01	N	Chloroethane	0.0440	0.0220 U	0.0220 UJ	0.0220 U	
PR79-WT-021-SD-01	N	Chloroform	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Chloromethane	0.0440	0.0220 U	0.0220 UJ	0.0220 U	
PR79-WT-021-SD-01	N	cis-1,2-Dichloroethene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Dibromochloromethane	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Ethylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Isopropylbenzene (Cumene)	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	m,p-Xylene	0.0440	0.0220 U	0.0220 UJ	0.0220 U	
PR79-WT-021-SD-01	N	Methylene chloride	0.110	0.0550 U	0.0550 UJ	0.0550 U	
PR79-WT-021-SD-01	N	n-Butylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	n-Propylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	o-Xylene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	p-Cymene (p-Isopropyltoluene)	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	sec-Butylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	tert-Butyl alcohol	0.110	0.0550 U	0.0550 UJ	0.0550 U	
PR79-WT-021-SD-01	N	tert-Butylbenzene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Toluene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	trans-1,2-Dichloroethene	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Trichloroethene (TCE)	0.0220	0.0110 U	0.0110 UJ	0.0110 U	
PR79-WT-021-SD-01	N	Vinyl chloride	0.0440	0.0220 U	0.0220 UJ	0.0220 U	

Modified Qualifiers for test method VOCSIMC

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
PR79-WT-008-SW-01	N	1,2,3-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WT-008-SW-01	N	1,2,4-Trichlorobenzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WT-008-SW-01	N	Benzene	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WT-008-SW-01	N	Chloroform	0.100	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WT-008-SW-01	N	Trichloroethene (TCE)	0.0500	0.0250 U	0.0250 UJ	0.0250 U	
PR79-WT-008-SW-01	N	Vinyl chloride	0.100	0.0500 U	0.0500 UJ	0.0500 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
H1	Test Hold Time
H2	Prep Hold Time
I	Surrogate recovery outside project limits.
L	Lab Blank
T	Trip Blank
TR	Trace Level Detect
V	Equipment Blank

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: A2340B (Hardness by Calculation)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Mg detected <LOQ in MBs PBWNE19ICW2 and PBWNE22ICW1. Ca ND in MBs. No quals since sample results >LOQ.
Were target analytes in the field blank less than MDL?		•		EB-03-PW-01, SWBG-EB-01-01-R <LOQ. No quals, samples >LOQ.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			MS on SW
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: AVS (EPA Draft Method for the Determination of Acid Volatile Sulfide and Simultaneously Extractable Metals in Sediment)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3763

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		See outlier report. Sample -27 reported from initial analysis with quals. Some surr %Rs rejectable for DBP (AQ samples) but samples not reanalyzed due to hold time. Some Pentachlorophenol results rejected.
Was a method blank prepared and analyzed with each batch?	•			Low surr %R for MB assoc with SD samples. MB may biased low. See outlier report for Chrysene blank actions assoc with SD samples. Several results negated.
Were target analytes in the method blank less than MDL?		•		WG277866-1RA: chrysene (also had low surr %R), WG278129-1: pyrene, benzo (a)anthracene, chrysene
Were target analytes in the field blank less than MDL?		•		Chrysene in SWBG-EB-01-01-R and EB-03-PW-01 was negated due to LB
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outliers report. WG277866-2RA: 1,4-Dioxane, Benzo(b)Fluoranthene low
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this set
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 18 analytes in 2 samples did not meet PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: ICAL RSD outside criteria 14-dioxane - result in PR79-WT-008-SD-01 would be qualified. CCV high pentachlorophenol: assoc results ND. Low IS perylene-d12 PR79-WT-021-SD-01: assoc pos results may be biased high. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?	•			pentachlorophenol due to surrogate recoveries

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Results in several filtered samples (--F) negated manually.
Were target analytes in the field blank less than MDL?		•		results qualified based on EBs for PW and SW (TOT and FILT). Some results in EBs were negated due to lab blank contamination (reason code L) so no EB qual for the assoc samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			acceptable for results >50X LOQ
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 2 analytes in 2 samples do not meet PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		see outliers report. Some results for -F samples negated manually.
Were target analytes in the field blank less than MDL?		•		EBs for PW samples contaminated with some analytes <LOQ; see outlier report
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		see outlier report for LCSWNE19IMW2
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			MS for SW samples
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			criteria met for results >50X LOQ
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 6 analytes in 2 samples did not meet PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW7470A (Mercury in Water (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		EB-03-PW-01 and EB-03-PW-01-F Hg <LOQ. Total or filtered results <LOQ in assoc PW samples manually negated.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?	•			MS on SW sample
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
Were the post spike recoveries within project acceptance limits?	•			
Were the serial dilution RPD values within project acceptance limits?	•			
Was the laboratory duplicate RPD within project acceptance limits?			•	see MS/MSD
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3763

Review Questions

Method: SW7471B (Mercury in Soil (Manual Cold-Vapor Technique))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		MS on SW only
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Were the post spike recoveries within project acceptance limits?			•	
Were the serial dilution RPD values within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report: 1 analyte in 1 sample did not meet PQL
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for SN3763

Review Questions

Method: SW8260C (Volatile Organic Compounds by GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			Note: sample SN3763-19 for VOC SIM qualified by ADR for HT exceendance. Quals removed since HT holding time calculated to the day was acceptable.
Were all requested target analytes reported?	•			
Were surrogate recoveries within project acceptance limits?		•		see outliers report; no quals for sample SN3763-27 since results were reported from -27RA, not -27RA2. Qualifiers removed for surr recovery since %R rounds to within limits.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		see outliers report for VOC and VOCSIM. Assoc results ND for compounds in EB and TB; no quals
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	no FD in this set
Were QAPP specified laboratory PQLs achieved?		•		see anomalies report - 22 analytes in 2 samples
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?		•		Not assessed in 2A validation: ICV below criteria for Chloromethane; assoc sediment results bias low. ICV above criteria for chloroethane and carbon disulfide, assoc results ND. CCV high for acetone, 2-butanone, 4-methyl-2-pentanone: acetone in PR79-WT-031-SW-01-R may be biased high, others ND. Low IS 1,4-DICHLOROBENZENE-D4 PR79-WT-021-SD-01: bias high assoc results ND. Nonconformances are not expected to impact data quality and qualifiers were not applied.
Were DoD QSM corrective actions followed if deviations were noted?		•		case narrative indicates ICV outside criteria, analysis should have been stopped and reanalyzed
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9045D (Soil and Waste pH)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		see outlier report
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?			•	
Were target analytes in the method blank less than MDL?			•	
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?			•	
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCS only
Was a MS/MSD pair prepared with each batch?		•		
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
Was the laboratory duplicate RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	
Were QAPP specified laboratory PQLs achieved?		•		see anomlaies report - 1 analyte in 1 sample
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data rejected during the verification process?		•		

Data Validation Report for JD17152-52_2a-SEDD_2a_1

Facility:	D01RI0063-02, Nike PR-79 (Internal)
Event:	PR-79, December 2020
SDG:	JD17152-52_2a-SEDD_2a_1
Guidance Document:	eQAPP Nike PR-79
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Accutest Laboratories, Dayton, NJ
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Richard Purdy, Project Chemist
Second Reviewer:	Kristin Rutherford, Senior Scientist
Date Submitted:	February 19, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	E625
NIKE-1-AC_DEC2020	JD17152-1	Water	Field Sample/N	X
NIKE-1-BC_DEC2020	JD17152-2	Water	Field Sample/N	X
NIKE-1-FD01_DEC2020	JD17152-4	Water	Field Duplicate/FD	X
NIKE-1-TAP_DEC2020	JD17152-3	Water	Field Sample/N	X
ROU-1-AC_DEC2020	JD17152-5	Water	Field Sample/N	X
ROU-1-BC_DEC2020	JD17152-6	Water	Field Sample/N	X
ROU-1-TAP_DEC2020	JD17152-7	Water	Field Sample/N	X
ROU-2-AC_DEC2020	JD17152-8	Water	Field Sample/N	X
ROU-2-BC_DEC2020	JD17152-9	Water	Field Sample/N	X
ROU-2-TAP_DEC2020	JD17152-10	Water	Field Sample/N	X
ROU-3-AC_DEC2020	JD17152-11	Water	Field Sample/N	X
ROU-3-BC_DEC2020	JD17152-12	Water	Field Sample/N	X
ROU-3-TAP_DEC2020	JD17152-13	Water	Field Sample/N	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the eQAPP Nike PR-79 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Accutest Laboratories, Dayton, NJ and were reported under sample delivery group (SDG) JD17152-52_2a-SEDD_2a_1. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 169 results (22.81%) out of the 741 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
E625	Samples received from Katahdin Analytical for full-scan GCMS by EPA 625.1. The corresponding SIM analysis was performed by Katahdin and is reported in SDG SN9855 and validated separately. This full-scan data package is also included in Katahdin's SN9855 package for completeness but was not validated.

February 16, 2021

Reviewed by Richard Purdy, Project Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Reviewed by Kristin Rutherford, Senior Scientist, AECOM

April 07, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method E625, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
F196262 (CV)	Benzyl butyl phthalate	120.9	80 - 120	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Benzyl butyl phthalate	1.90	0.480 U	0.480 UJ		ug/l	V2
NIKE-1-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
NIKE-1-FD01_DEC2020	FD	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
NIKE-1-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-1-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-1-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-1-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-2-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-2-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-2-TAP_DEC2020	N	Benzyl butyl phthalate	1.90	0.480 U	0.480 UJ		ug/l	V2
ROU-3-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-3-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-3-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E625, LCS RPD

The objective of laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. LCS/LCSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Laboratory control sample/laboratory control sample duplicate RPD results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
OP30892-BSD (BD)/ OP30892-BSD	2-Chlorophenol	10.75	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	Hexachloroethane	11.10	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	2-Nitrophenol	11.22	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	Hexachlorobutadiene	11.32	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	2-Methylphenol (o-Cresol)	11.34	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	11.54	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	2-Methylnaphthalene	12.58	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	1,3-Dichlorobenzene	12.69	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	4-Chloroaniline	12.71	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	Phenol	13.82	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	Hexachlorocyclopentadiene	19.07	< 10	< 10	rpd	J/UJ	Z	
OP30892-BSD (BD)/ OP30892-BSD	2,4-Dimethylphenol	19.15	< 10	< 10	rpd	J/UJ	Z	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS RPD for E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	1,3-Dichlorobenzene	0.950	0.480 U	0.480 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2,4-Dimethylphenol	4.80	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Chlorophenol	4.80	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Methylnaphthalene	0.950	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Methylphenol (o-Cresol)	1.90	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Nitrophenol	4.80	1.90 U	1.90 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	4-Chloroaniline	4.80	1.90 U	1.90 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	1.90	0.480 U	0.480 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Hexachlorobutadiene	0.950	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Hexachlorocyclopentadiene	9.50	9.50 U	9.50 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Hexachloroethane	1.90	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Phenol	1.90	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	1,3-Dichlorobenzene	0.990	0.500 U	0.500 UJ		ug/l	Z

Qualified Results associated with the LCS RPD for E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-BC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Methylnaphthalene	0.990	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Hexachlorobutadiene	0.990	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Hexachlorocyclopentadiene	9.90	9.90 U	9.90 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Hexachloroethane	2.00	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Phenol	2.00	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	1,3-Dichlorobenzene	0.990	0.500 U	0.500 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Methylnaphthalene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z

Qualified Results associated with the LCS RPD for E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-1-AC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Hexachlorobutadiene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Hexachlorocyclopentadiene	9.90	9.90 U	9.90 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Hexachloroethane	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Phenol	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2,4-Dimethylphenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Chlorophenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2,4-Dimethylphenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Chlorophenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	1,3-Dichlorobenzene	0.990	0.500 U	0.500 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Methylnaphthalene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Hexachlorobutadiene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Hexachlorocyclopentadiene	9.90	9.90 U	9.90 UJ		ug/l	Z

Qualified Results associated with the LCS RPD for E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-2-AC_DEC2020	N	Hexachloroethane	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Phenol	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Methylnaphthalene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Hexachlorobutadiene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Hexachlorocyclopentadiene	10.0	10.0 U	10.0 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Hexachloroethane	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Phenol	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	1,3-Dichlorobenzene	0.950	0.480 U	0.480 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2,4-Dimethylphenol	4.80	2.40 U	2.40 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Chlorophenol	4.80	2.40 U	2.40 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Methylnaphthalene	0.950	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	1.90	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Nitrophenol	4.80	1.90 U	1.90 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	4-Chloroaniline	4.80	1.90 U	1.90 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	1.90	0.480 U	0.480 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Hexachlorobutadiene	0.950	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.50	9.50 U	9.50 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Hexachloroethane	1.90	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Phenol	1.90	0.950 U	0.950 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Methylnaphthalene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Hexachlorobutadiene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Hexachlorocyclopentadiene	10.0	10.0 U	10.0 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Hexachloroethane	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Phenol	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z

Qualified Results associated with the LCS RPD for E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-3-BC_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: E625 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Benzyl butyl phthalate	1.90	0.480 U	0.480 UJ		ug/l	V2
NIKE-1-AC_DEC2020	N	1,3-Dichlorobenzene	0.950	0.480 U	0.480 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2,4-Dimethylphenol	4.80	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Chlorophenol	4.80	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Methylnaphthalene	0.950	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Methylphenol (o-Cresol)	1.90	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	2-Nitrophenol	4.80	1.90 U	1.90 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	4-Chloroaniline	4.80	1.90 U	1.90 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	1.90	0.480 U	0.480 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Hexachlorobutadiene	0.950	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Hexachlorocyclopentadiene	9.50	9.50 U	9.50 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Hexachloroethane	1.90	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-AC_DEC2020	N	Phenol	1.90	0.950 U	0.950 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
NIKE-1-BC_DEC2020	N	1,3-Dichlorobenzene	0.990	0.500 U	0.500 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Methylnaphthalene	0.990	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Hexachlorobutadiene	0.990	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Hexachlorocyclopentadiene	9.90	9.90 U	9.90 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Hexachloroethane	2.00	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-BC_DEC2020	N	Phenol	2.00	0.990 U	0.990 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
NIKE-1-FD01_DEC2020	FD	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z

Table of All Qualified Results

Test Method: E625 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-FD01_DEC2020	FD	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-FD01_DEC2020	FD	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
NIKE-1-TAP_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
NIKE-1-TAP_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-1-AC_DEC2020	N	1,3-Dichlorobenzene	0.990	0.500 U	0.500 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Methylnaphthalene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Hexachlorobutadiene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Hexachlorocyclopentadiene	9.90	9.90 U	9.90 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Hexachloroethane	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-1-AC_DEC2020	N	Phenol	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-1-BC_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2,4-Dimethylphenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Chlorophenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z

Table of All Qualified Results

Test Method: E625 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-1-BC_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-BC_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-1-TAP_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2,4-Dimethylphenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Chlorophenol	4.90	2.50 U	2.50 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-1-TAP_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-2-AC_DEC2020	N	1,3-Dichlorobenzene	0.990	0.500 U	0.500 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Methylnaphthalene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Hexachlorobutadiene	0.990	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Hexachlorocyclopentadiene	9.90	9.90 U	9.90 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Hexachloroethane	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-2-AC_DEC2020	N	Phenol	2.00	0.990 U	0.990 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-2-BC_DEC2020	N	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Methylnaphthalene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Hexachlorobutadiene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Hexachlorocyclopentadiene	10.0	10.0 U	10.0 UJ		ug/l	Z

Table of All Qualified Results

Test Method: E625 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-2-BC_DEC2020	N	Hexachloroethane	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-BC_DEC2020	N	Phenol	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Benzyl butyl phthalate	1.90	0.480 U	0.480 UJ		ug/l	V2
ROU-2-TAP_DEC2020	N	1,3-Dichlorobenzene	0.950	0.480 U	0.480 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2,4-Dimethylphenol	4.80	2.40 U	2.40 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Chlorophenol	4.80	2.40 U	2.40 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Methylnaphthalene	0.950	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	1.90	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	2-Nitrophenol	4.80	1.90 U	1.90 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	4-Chloroaniline	4.80	1.90 U	1.90 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	1.90	0.480 U	0.480 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Hexachlorobutadiene	0.950	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.50	9.50 U	9.50 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Hexachloroethane	1.90	0.950 U	0.950 UJ		ug/l	Z
ROU-2-TAP_DEC2020	N	Phenol	1.90	0.950 U	0.950 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 UJ		ug/l	V2
ROU-3-AC_DEC2020	N	1,3-Dichlorobenzene	1.00	0.500 U	0.500 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2,4-Dimethylphenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Chlorophenol	5.00	2.50 U	2.50 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Methylnaphthalene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	2-Nitrophenol	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	4-Chloroaniline	5.00	2.00 U	2.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.500 U	0.500 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Hexachlorobutadiene	1.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Hexachlorocyclopentadiene	10.0	10.0 U	10.0 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Hexachloroethane	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-AC_DEC2020	N	Phenol	2.00	1.00 U	1.00 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-3-BC_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z

Table of All Qualified Results

Test Method: E625 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-3-BC_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-BC_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 UJ		ug/l	V2
ROU-3-TAP_DEC2020	N	1,3-Dichlorobenzene	0.980	0.490 U	0.490 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2,4-Dimethylphenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Chlorophenol	4.90	2.40 U	2.40 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Methylnaphthalene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Methylphenol (o-Cresol)	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	2-Nitrophenol	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	4-Chloroaniline	4.90	2.00 U	2.00 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Bis(2-chloroethyl) ether (2-Chloroethyl ether)	2.00	0.490 U	0.490 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Hexachlorobutadiene	0.980	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Hexachlorocyclopentadiene	9.80	9.80 U	9.80 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Hexachloroethane	2.00	0.980 U	0.980 UJ		ug/l	Z
ROU-3-TAP_DEC2020	N	Phenol	2.00	0.980 U	0.980 UJ		ug/l	Z

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method E625

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
NIKE-1-AC_DEC2020	N	Benzyl butyl phthalate	1.90	0.480 U	0.480 U	0.480 UJ	V2
NIKE-1-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 U	0.500 UJ	V2
NIKE-1-FD01_DEC2020	FD	Benzyl butyl phthalate	2.00	0.490 U	0.490 U	0.490 UJ	V2
NIKE-1-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 U	0.490 UJ	V2
ROU-1-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 U	0.500 UJ	V2
ROU-1-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 U	0.490 UJ	V2
ROU-1-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 U	0.490 UJ	V2
ROU-2-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 U	0.500 UJ	V2
ROU-2-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 U	0.500 UJ	V2
ROU-2-TAP_DEC2020	N	Benzyl butyl phthalate	1.90	0.480 U	0.480 U	0.480 UJ	V2
ROU-3-AC_DEC2020	N	Benzyl butyl phthalate	2.00	0.500 U	0.500 U	0.500 UJ	V2
ROU-3-BC_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 U	0.490 UJ	V2
ROU-3-TAP_DEC2020	N	Benzyl butyl phthalate	2.00	0.490 U	0.490 U	0.490 UJ	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
V2	CCV
Z	LCS RPD

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: E625 (Extractable Priority Pollutants (Base/Neutral and Acid))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		(1) Note that this package references samples as ending "_DEC2020" while AECOM and the corresponding Katahdin data packages references the samples ending "-DEC2020." No further action is taken. (2) The field duplicate is listed on the COC as NIKE-1-FD01 but is reported as NIKE-1-FD01-DEC2020. No further action is taken. (3) The COC documenting transfer of samples from Katahdin to SGS incorrectly lists samples beginning "ROV"; they should be "ROU." They are correctly identified in the data package.
Were samples preserved properly and received in good condition?	•			Cooler: 2.6C
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?	•			No issues noted.
Were the required minimum levels of calibration standards used in the initial calibration?	•			No issues noted.
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		Butylbenzylphthalate exceeded CCV criteria. See outlier report. Nonconformance and qualifiers applied manually.
Were Internal Standard retention times and area criteria within method requirements?	•			No issues noted.
Were internal standards spiked for every sample, standard, and QC sample?	•			No issues noted.
Were surrogate recoveries within project acceptance limits?	•			No issues noted.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			All analytes nondetect.
Were target analytes in the field blank less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			Identified as BS/BSD in data package.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?		•		See outlier report.
Was a MS/MSD pair prepared with each batch?	•			Sample ROU-3-BC-DEC2020 was submitted as a MS/MSD pair.
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			Samples NIKE-1-BC_DEC2020 and NIKE-1-FD01_DEC2020 submitted as field duplicate pair. All results nondetect.

Review Questions

Method: E625 (Extractable Priority Pollutants (Base/Neutral and Acid))				
Review Questions	Yes	No	NA	Comment
Were QAPP specified laboratory PQLs achieved?	•			Per Worksheet #15
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		

Data Validation Report for SN9855

Facility:	D01RI0063-02, Nike PR-79 (Internal)
Event:	PR-79, December 2020
SDG:	SN9855
Guidance Document:	eQAPP Nike PR-79
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Richard Purdy, Project Chemist
Second Reviewer:	Kristin Rutherford, Senior Scientist
Date Submitted:	February 19, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	BNASIM	E524.2
NIKE-1-AC_DEC2020	SN9855-1	Water	Field Sample/N	X	X
NIKE-1-BC_DEC2020	SN9855-2	Water	Field Sample/N	X	X
NIKE-1-FD01_DEC2020	SN9855-4	Water	Field Duplicate/FD	X	X
NIKE-1-TAP_DEC2020	SN9855-3	Water	Field Sample/N	X	X
ROU-1-AC_DEC2020	SN9855-5	Water	Field Sample/N	X	X
ROU-1-BC_DEC2020	SN9855-6	Water	Field Sample/N	X	X
ROU-1-TAP_DEC2020	SN9855-7	Water	Field Sample/N	X	X
ROU-2-AC_DEC2020	SN9855-8	Water	Field Sample/N	X	X
ROU-2-BC_DEC2020	SN9855-9	Water	Field Sample/N	X	X
ROU-2-TAP_DEC2020	SN9855-10	Water	Field Sample/N	X	X
ROU-3-AC_DEC2020	SN9855-11	Water	Field Sample/N	X	X
ROU-3-BC_DEC2020	SN9855-12	Water	Field Sample/N	X	X
ROU-3-TAP_DEC2020	SN9855-13	Water	Field Sample/N	X	X
TB-DW-20201130	SN9855-14	Water	Trip Blank/TB		X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the eQAPP Nike PR-79 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SN9855. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 117 results (11.99%) out of the 976 results (sample and field QC samples) reported are qualified based on review and 3 results (0.31%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
BNASIM	The full-scan EPA625.1 analyses corresponding to the BNASIM analyses reported herein were subcontracted to and reported by SGS Dayton (SDG JD17152). Although the SGS data package is included with SDG SN9855, the data validation was performed on the stand-alone package and reported separately.
E524.2	No additional comments; see Checklist for detail.

February 15, 2021

Reviewed by Richard Purdy, Project Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Reviewed by Kristin Rutherford, Senior Scientist, AECOM

April 07, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method BNASIM, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291112-1 (LB)/ WG291112-1	Bis(2-ethylhexyl)phthalate	1.000	< 0.5	< 1	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Lab Blank for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.930	0.540 JB	0.930 U		ug/l	L
ROU-2-AC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.950	0.590 JB	0.950 U		ug/l	L
ROU-3-BC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.950	0.880 JB	0.950 U		ug/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291112-2 (BS)/ WG291112-2	Pentachlorophenol	16.05	36 - 141	10 - 141	percent	J/UJ	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Pentachlorophenol	0.930	0.470 UL	0.470 UJ		ug/l	C
NIKE-1-BC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
NIKE-1-FD01_DEC2020	FD	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
NIKE-1-TAP_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
ROU-1-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
ROU-1-BC_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C/I
ROU-1-TAP_DEC2020	N	Pentachlorophenol	0.930	0.470 UL	0.470 UJ		ug/l	C
ROU-2-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C/I
ROU-2-BC_DEC2020	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
ROU-2-TAP_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
ROU-3-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
ROU-3-BC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
ROU-3-TAP_DEC2020	N	Pentachlorophenol	0.930	0.470 UL	0.470 UJ		ug/l	C

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ROU-3-BC_DEC2020 (MS)/ WG291112-3	Benzo(a)pyrene	38.62	53 - 120	10 - 120	percent	J/UJ	M	
ROU-3-BC_DEC2020 (SD)/ WG291112-4	Benzo(a)pyrene	46.56	53 - 120	10 - 120	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-3-BC_DEC2020	N	Benzo(a)pyrene	0.190	0.0950 UMM	0.0950 UJ		ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method BNASIM, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ROU-3-BC_DEC2020 (SD)/ WG291112-4	Bis(2-ethylhexyl)phthalate	26.09	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method BNASIM, Surrogate

Method performance for individual samples is demonstrated through spiking activities. All samples are spiked with surrogate compounds prior to sample preparation. The sample itself may produce effects due to such factors as interferences and high concentrations of analytes. Summary forms were evaluated and compared to electronic data deliverables. Surrogate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ROU-1-BC_DEC2020 (N)/ SN9855-6	2,4-Dibromophenol	0.000	10 - 130	10 - 130	percent	J/R	I	
ROU-2-AC_DEC2020 (N)/ SN9855-8	2,4-Dibromophenol	1.340	10 - 130	10 - 130	percent	J/R	I	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Surrogate for BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-1-BC_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C/I
ROU-2-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C/I

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291708-4 (CV)	Methylene chloride	135.9	70 - 130	50 - 150	percent	J/UJ	V2	
WG291786-4 (CV)	Methylene chloride	138.1	70 - 130	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-FD01_DEC2020	FD	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-1-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-1-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-1-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-2-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-2-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-2-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-3-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-3-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-3-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
TB-DW-20201130	TB	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Initial Calibration RRF

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICAL GCMS_D 12/10/2020	tert-Butyl alcohol	0.007740				J/UJ	G1	
ICAL GCMS_D 12/10/2020	Bromoform	0.08012				J/UJ	G1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RRF for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
NIKE-1-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
NIKE-1-FD01_DEC2020	FD	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-FD01_DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
NIKE-1-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-1-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-1-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-1-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-1-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-1-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-1-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-2-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-2-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-2-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-2-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-2-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-2-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-3-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-3-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-3-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-3-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-3-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-3-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
TB-DW-20201130	TB	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
TB-DW-20201130	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291542-8 (IV)	Dichlorodifluoromethane	123.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	Acetone	129.9	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	Bromomethane	130.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	1,1-Dichloroethene	72.87	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-1-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-1-AC_DEC2020	N	Acetone	2.50	18.0	18.0 J		ug/l	V1
ROU-1-AC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-1-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-1-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-1-BC_DEC2020	N	Acetone	2.50	2.20 J	2.20 J		ug/l	TR/V1
ROU-1-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-1-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-1-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-1-TAP_DEC2020	N	Acetone	2.50	1.70 J	1.70 J		ug/l	TR/V1
ROU-1-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-1-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-2-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1

Qualified Results associated with the Initial Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-2-AC_DEC2020	N	Acetone	2.50	1.30 J	1.30 J		ug/l	TR/V1
ROU-2-AC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-2-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-2-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-2-BC_DEC2020	N	Acetone	2.50	2.60	2.60 J		ug/l	V1
ROU-2-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-2-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-2-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-2-TAP_DEC2020	N	Acetone	2.50	1.40 J	1.40 J		ug/l	TR/V1
ROU-2-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-2-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UMM	0.500 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
TB-DW-20201130	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
TB-DW-20201130	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
TB-DW-20201130	TB	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
TB-DW-20201130	TB	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291542-10 (LB)/ WG291542-10	Methylene chloride	0.6300	< 0.62	< 2.5	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method E524.2, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291708-1 (BS)/ WG291708-1	Bromomethane	132.0	70 - 130	10 - 130	percent	J/None	C	
WG291786-1 (BS)/ WG291786-1	Dichlorodifluoromethane	132.0	70 - 130	10 - 130	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method E524.2, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ROU-3-BC_DEC2020 (MS)/ WG291708-6	Dichlorodifluoromethane	148.0	70 - 130	20 - 130	percent	J/None	M	
ROU-3-BC_DEC2020 (SD)/ WG291708-7	Dichlorodifluoromethane	144.0	70 - 130	20 - 130	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: BNASIM Extraction Method: SW3520

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.930	0.540 JB	0.930 U		ug/l	L
NIKE-1-AC_DEC2020	N	Pentachlorophenol	0.930	0.470 UL	0.470 UJ		ug/l	C
NIKE-1-BC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
NIKE-1-FD01_DEC2020	FD	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
NIKE-1-TAP_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
ROU-1-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
ROU-1-BC_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 R		ug/l	C/I
ROU-1-TAP_DEC2020	N	Pentachlorophenol	0.930	0.470 UL	0.470 UJ		ug/l	C
ROU-2-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 R		ug/l	C/I
ROU-2-AC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.950	0.590 JB	0.950 U		ug/l	L
ROU-2-BC_DEC2020	N	Pentachlorophenol	0.960	0.480 UL	0.480 UJ		ug/l	C
ROU-2-TAP_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 UJ		ug/l	C
ROU-3-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
ROU-3-BC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.950	0.880 JB	0.950 U		ug/l	L
ROU-3-BC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 UJ		ug/l	C
ROU-3-BC_DEC2020	N	Benzo(a)pyrene	0.190	0.0950 UMM	0.0950 UJ		ug/l	M
ROU-3-TAP_DEC2020	N	Pentachlorophenol	0.930	0.470 UL	0.470 UJ		ug/l	C

Test Method: E524.2 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-AC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
NIKE-1-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-BC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
NIKE-1-FD01_DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-FD01_DEC2020	FD	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-FD01_DEC2020	FD	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-FD01_DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Table of All Qualified Results

Test Method: E524.2 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
NIKE-1-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
NIKE-1-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
NIKE-1-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
NIKE-1-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-1-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-1-AC_DEC2020	N	Acetone	2.50	18.0	18.0 J		ug/l	V1
ROU-1-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-1-AC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-1-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-1-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-1-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-1-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-1-BC_DEC2020	N	Acetone	2.50	2.20 J	2.20 J		ug/l	TR/V1
ROU-1-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-1-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-1-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-1-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-1-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-1-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-1-TAP_DEC2020	N	Acetone	2.50	1.70 J	1.70 J		ug/l	TR/V1
ROU-1-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-1-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-1-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-1-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-1-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-2-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-2-AC_DEC2020	N	Acetone	2.50	1.30 J	1.30 J		ug/l	TR/V1
ROU-2-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-2-AC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-2-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-2-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-2-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-2-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-2-BC_DEC2020	N	Acetone	2.50	2.60	2.60 J		ug/l	V1
ROU-2-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-2-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-2-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-2-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-2-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Table of All Qualified Results

Test Method: E524.2 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
ROU-2-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-2-TAP_DEC2020	N	Acetone	2.50	1.40 J	1.40 J		ug/l	TR/V1
ROU-2-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-2-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-2-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-2-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-2-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-3-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-3-AC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-3-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-3-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-3-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-3-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UMM	0.500 UJ		ug/l	V1
ROU-3-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-3-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
ROU-3-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
ROU-3-TAP_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
ROU-3-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
ROU-3-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
TB-DW-20201130	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
TB-DW-20201130	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
TB-DW-20201130	TB	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
TB-DW-20201130	TB	Bromomethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
TB-DW-20201130	TB	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-DW-20201130	TB	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
TB-DW-20201130	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method BNASIM

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
ROU-1-BC_DEC2020	N	Pentachlorophenol	0.940	0.470 UL	0.470 X	0.470 R	C/I
ROU-2-AC_DEC2020	N	Pentachlorophenol	0.950	0.480 UL	0.480 X	0.480 R	C/I
ROU-3-BC_DEC2020	N	Bis(2-ethylhexyl)phthalate	0.950	0.880 JB	0.950 UJ	0.950 U	L

Modified Qualifiers for test method E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
NIKE-1-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
NIKE-1-AC_DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
NIKE-1-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
NIKE-1-AC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
NIKE-1-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
NIKE-1-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
NIKE-1-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
NIKE-1-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
NIKE-1-BC_DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
NIKE-1-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
NIKE-1-BC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
NIKE-1-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
NIKE-1-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
NIKE-1-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
NIKE-1-FD01_DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
NIKE-1-FD01_DEC2020	FD	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
NIKE-1-FD01_DEC2020	FD	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
NIKE-1-FD01_DEC2020	FD	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
NIKE-1-FD01_DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
NIKE-1-FD01_DEC2020	FD	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
NIKE-1-FD01_DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
NIKE-1-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
NIKE-1-TAP_DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
NIKE-1-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
NIKE-1-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
NIKE-1-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
NIKE-1-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
NIKE-1-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-1-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-1-AC_DEC2020	N	Acetone	2.50	18.0	18.0	18.0 J	V1
ROU-1-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-1-AC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-1-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-1-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-1-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1

Table of Results with Modified Qualifiers

Modified Qualifiers for test method E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
ROU-1-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-1-BC_DEC2020	N	Acetone	2.50	2.20 J	2.20 J	2.20 J	TR/V1
ROU-1-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-1-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-1-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-1-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-1-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-1-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-1-TAP_DEC2020	N	Acetone	2.50	1.70 J	1.70 J	1.70 J	TR/V1
ROU-1-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-1-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-1-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-1-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-1-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-2-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-2-AC_DEC2020	N	Acetone	2.50	1.30 J	1.30 J	1.30 J	TR/V1
ROU-2-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-2-AC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-2-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-2-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-2-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-2-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-2-BC_DEC2020	N	Acetone	2.50	2.60	2.60	2.60 J	V1
ROU-2-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-2-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-2-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-2-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-2-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-2-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-2-TAP_DEC2020	N	Acetone	2.50	1.40 J	1.40 J	1.40 J	TR/V1
ROU-2-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-2-TAP_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-2-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-2-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-2-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-3-AC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-3-AC_DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
ROU-3-AC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-3-AC_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-3-AC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-3-AC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
ROU-3-AC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-3-BC_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-3-BC_DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
ROU-3-BC_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-3-BC_DEC2020	N	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-3-BC_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UMM	0.500 U	0.500 UJ	V1
ROU-3-BC_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-3-BC_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
ROU-3-TAP_DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
ROU-3-TAP_DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
ROU-3-TAP_DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
ROU-3-TAP_DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
ROU-3-TAP_DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
ROU-3-TAP_DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
ROU-3-TAP_DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
TB-DW-20201130	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
TB-DW-20201130	TB	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
TB-DW-20201130	TB	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
TB-DW-20201130	TB	Bromomethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
TB-DW-20201130	TB	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
TB-DW-20201130	TB	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
TB-DW-20201130	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
D	MS RPD
G1	Initial Calibration RRF
I	Surrogate recovery outside project limits.
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		(1) Note that this report references samples as ending "_DEC2020" while AECOM and Katahdin reference the samples ending "-DEC2020." No further action is taken. (2) The field duplicate is listed on the COC as NIKE-1-FD01 but is reported as NIKE-1-FD01-DEC2020. No further action is taken.
Were samples preserved properly and received in good condition?	•			Cooler temperatures: 0.9C, 1.1C, 1.6C
Were holding times met?	•			All samples extracted within 7days and analyzed within 40days.
Were all requested target analytes reported?	•			Four SVOC-SIM analytes reported in this data package.
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?		•		Closing calibration verifications were analyzed outside criteria. No validation was taken as the CCVs met performance criteria and the time exceedances were minimal.
Was the Calibration within acceptance criteria?	•			No issues noted.
Were the required minimum levels of calibration standards used in the initial calibration?	•			No issues noted.
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			No issues noted.
Were CCVs run at the required frequency and within acceptance criteria?		•		Closing CCVs were analyzed outside 12hour requirement. No validation was taken as the CCVs met performance criteria and the time exceedances were minimal.
Were Internal Standard retention times and area criteria within method requirements?	•			
Were internal standards spiked for every sample, standard, and QC sample?	•			
Were surrogate recoveries within project acceptance limits?		•		Low recoveries noted for 2,4-dibromophenol in samples ROU-1-BC-DEC2020 and ROU-2-AC-DEC2020. See outlier report.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Bis(2-ethylhexyl)phthalate detected in the method blank. See outlier report.
Were target analytes in the field blank less than MDL?			•	Field/equipment blank not submitted with this sample set.
Was an LCS/LCSD pair prepared and analyzed with each batch?		•		LCS not prepared and analyzed in duplicate.
Were LCS/LCSD recoveries within project acceptance limits?		•		Pentachlorophenol exceeded QC criteria. See outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			Sample ROU-3-BC-DEC2020 was submitted as a MS/MSD pair.
Were MS/MSD recoveries within project acceptance limits?		•		Low recoveries were noted for benzo(a)pyrene in the MS/MSD pair. See outlier report.
Was the MS/MSD RPD within project acceptance limits?		•		Bis(2-ethylhexyl)phthalate RPD exceeded criteria. No data qualification is necessary based on QSM criteria.

Review Questions

Method: BNASIM (GC/MS-SIM Analysis by SW8270)				
Review Questions	Yes	No	NA	Comment
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			Samples NIKE-1-TAP-DEC2020 and NIKE-FD-01 submitted as field duplicate pair. All results nondetect.
Were QAPP specified laboratory PQLs achieved?	•			Per WS#15.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		Samples with surrogate recovery exceedances were not re-extracted and re-analyzed.
Were any data recommended for rejection (exclusion) in the data validation process?	•			Based on professional judgment, the low recoveries for surrogate 2,4-dibromophenol in samples ROU-1-BC-DEC2020 and ROU-2-AC-DEC2020 resulted in rejected data (R) for pentachlorophenol.

Review Questions

Method: E524.2 (Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		(1) Note that this report references samples as ending "_DEC2020" while AECOM and Katahdin reference the samples ending "-DEC2020." No further action is taken. (2) The field duplicate is listed on the COC as NIKE-1-FD01 but is reported as NIKE-1-FD01-DEC2020. No further action is taken.
Were samples preserved properly and received in good condition?	•			Cooler temps 0.9C, 1.1C, 1.6C. All sample pH < 2.
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			Samples and closing CCVs were analyzed within 12 hour of instrument tune.
Was the Calibration within acceptance criteria?		•		Validation criteria for calibration were based on QSM guidelines. RSD acceptable. See outlier report for RRF exceedances. Nonconformances and qualifications applied manually. Based on professional judgment, the ND results for t-butyl alcohol and bromoform were qualified as estimated (UJ) rather than rejected (R) for low RRF because ICV and LCS performance indicated that the analyses were in control.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Dichlorodifluoromethane, bromomethane, 1,1-dichloroethene, and acetone exceeded QC limits in ICV WG291542-8. See outlier report. Nonconformances and qualifications applied manually.
Were CCVs run at the required frequency and within acceptance criteria?		•		Methylene chloride exceeded %D acceptance criteria in opening CCVs. Additional closing CCVs were analyzed per DOD QSM. See outlier report. Nonconformances and qualifications applied manually.
Were Internal Standard retention times and area criteria within method requirements?	•			No issues noted.
Were internal standards spiked for every sample, standard, and QC sample?	•			No issues noted.
Were surrogate recoveries within project acceptance limits?	•			No issues noted.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Methylene chloride detected in blank WG291542-10. No qualification necessary. See outlier report.
Were target analytes in the field blank less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			Single LCS analyzed per batch.
Were LCS/LCSD recoveries within project acceptance limits?		•		Bromomethane (WG291708-1) and dichlorodifluoromethane (WG291786-1) exceeded recovery requirements. No data qualification necessary. See outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	

Review Questions

Method: E524.2 (Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS)				
Review Questions	Yes	No	NA	Comment
Was a MS/MSD pair prepared with each batch?	•			Sample ROU-3-BC-DEC2020 submitted for MS/MSD analysis.
Were MS/MSD recoveries within project acceptance limits?		•		Dichlorodifluoromethane exceeded recovery requirements. No data qualification necessary. See outlier report.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			Sample NIKE-1-TAP-DEC2020 and NIKE-1-FD01-DEC2020 submitted as field duplicate pair.
Were QAPP specified laboratory PQLs achieved?		•		The laboratory's reported LOQs for trichloroethene and vinyl chloride exceed the Project Quantitation Limits.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		ICAL and ICV exceedances were noted and calibration was not re-performed. See outliers reports for qualifications.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Results for bromoform and t-butyl alcohol were qualified as estimated (UJ) rather than rejected (R) because of low RRF.

Data Validation Report for SN9912

Facility:	D01RI0063-02, Nike PR-79 (Internal)
Event:	PR-79, December 2020
SDG:	SN9912
Guidance Document:	eQAPP Nike PR-79
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Richard Purdy, Project Chemist
Second Reviewer:	Kristin Rutherford, Senior Scientist
Date Submitted:	February 22, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	E524.2
DW-19-BC-DEC2020	SN9912-5	Water	Field Sample/N	X
DW-19-TAP-DEC2020	SN9912-6	Water	Field Sample/N	X
DW-20-BC-DEC2020	SN9912-7	Water	Field Sample/N	X
DW-20-TAP-DEC2020	SN9912-8	Water	Field Sample/N	X
DW-31-BC-DEC2020	SN9912-2	Water	Field Sample/N	X
DW-31-TAP-DEC2020	SN9912-3	Water	Field Sample/N	X
DW-33-FD02-DEC2020	SN9912-12	Water	Field Duplicate/FD	X
DW-33-TAP-DEC2020	SN9912-11	Water	Field Sample/N	X
DW-37-TAP-DEC2020	SN9912-1	Water	Field Sample/N	X
DW-41-TAP-DEC2020	SN9912-10	Water	Field Sample/N	X
DW-68-TAP-DEC2020	SN9912-4	Water	Field Sample/N	X
TB-DW-20201201	SN9912-9	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the eQAPP Nike PR-79 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) SN9912. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 80 results (10.10%) out of the 792 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Validation upgraded to Stage 2B per client request.

Analytical Method	Data Reviewer Comment
E524.2	No additional comments; see Checklist for detail.

February 16, 2021

Reviewed by Richard Purdy, Project Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Reviewed by Kristin Rutherford, Senior Scientist, AECOM

April 07, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method E524.2, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291786-4 (CV)	Methylene chloride	138.1	70 - 130	50 - 150	percent	J/UJ	V2	
WG291812-4 (CV)	Acetone	131.9	70 - 130	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-19-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-19-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-20-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-20-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-31-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-31-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-33-FD02-DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-33-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-37-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-41-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-68-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
TB-DW-20201201	TB	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Initial Calibration RRF

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICAL GCMS_D 12/10/2020	tert-Butyl alcohol	0.007740				J/UJ	G1	
ICAL GCMS_D 12/10/2020	Bromoform	0.08012				J/UJ	G1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RRF for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-19-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-19-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-19-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-19-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-20-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-20-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-20-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-20-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-31-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-31-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-31-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-31-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-33-FD02-DEC2020	FD	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-33-FD02-DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-33-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-33-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-37-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-37-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-41-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-41-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-68-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-68-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
TB-DW-20201201	TB	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
TB-DW-20201201	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291542-8 (IV)	Dichlorodifluoromethane	123.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	Acetone	129.9	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	Bromomethane	130.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	1,1-Dichloroethene	72.87	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-19-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-20-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-20-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-20-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-20-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-20-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-31-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-33-FD02-DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-33-FD02-DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-33-FD02-DEC2020	FD	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-FD02-DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1

Qualified Results associated with the Initial Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-33-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-33-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-41-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-41-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-41-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-41-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
TB-DW-20201201	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
TB-DW-20201201	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
TB-DW-20201201	TB	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-DW-20201201	TB	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291786-1 (BS)/ WG291786-1	Dichlorodifluoromethane	132.0	70 - 130	10 - 130	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: E524.2 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-19-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-19-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-19-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-19-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-19-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-19-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-19-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-19-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-20-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-20-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-20-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-20-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-20-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-20-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-20-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-20-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-20-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-20-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-31-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-31-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-31-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-31-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-31-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-31-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-31-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2

Table of All Qualified Results

Test Method: E524.2 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-31-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-33-FD02-DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-33-FD02-DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-33-FD02-DEC2020	FD	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-33-FD02-DEC2020	FD	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-FD02-DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-FD02-DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-33-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-33-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-33-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-33-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-33-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-37-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-37-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-37-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-37-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-41-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-41-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1/V2
DW-41-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-41-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-41-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-41-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-68-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-68-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
DW-68-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2
DW-68-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
TB-DW-20201201	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
TB-DW-20201201	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V1
TB-DW-20201201	TB	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
TB-DW-20201201	TB	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-DW-20201201	TB	Dichlorodifluoromethane	1.00	0.500 UL	0.500 UJ		ug/l	V1
TB-DW-20201201	TB	Methylene chloride	2.50	1.20 U	1.20 UJ		ug/l	V2

Table of All Qualified Results

Test Method: E524.2 Extraction Method: METHOD

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
TB-DW-20201201	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
DW-19-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-19-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-19-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-19-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-19-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-19-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-19-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-19-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-19-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-19-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-19-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-19-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-19-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-19-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-20-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-20-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-20-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-20-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-20-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-20-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-20-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-20-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-20-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1/V2
DW-20-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-20-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-20-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-20-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-31-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-31-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-31-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-31-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-31-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-31-BC-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-31-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-31-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-31-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-31-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-31-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-31-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-31-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-31-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1

Table of Results with Modified Qualifiers

Modified Qualifiers for test method E524.2							
FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
DW-33-FD02-DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-33-FD02-DEC2020	FD	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1/V2
DW-33-FD02-DEC2020	FD	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-33-FD02-DEC2020	FD	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-33-FD02-DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-33-FD02-DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-33-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-33-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1/V2
DW-33-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-33-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-33-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-33-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-37-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-37-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-37-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-37-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-37-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-37-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-37-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-41-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-41-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1/V2
DW-41-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-41-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-41-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-41-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-68-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-68-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
DW-68-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-68-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-68-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
DW-68-TAP-DEC2020	N	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
DW-68-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
TB-DW-20201201	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
TB-DW-20201201	TB	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V1
TB-DW-20201201	TB	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
TB-DW-20201201	TB	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
TB-DW-20201201	TB	Dichlorodifluoromethane	1.00	0.500 UL	0.500 U	0.500 UJ	V1
TB-DW-20201201	TB	Methylene chloride	2.50	1.20 U	1.20 U	1.20 UJ	V2
TB-DW-20201201	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1

Table of Results with Modified Qualifiers

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
G1	Initial Calibration RRF
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: E524.2 (Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		The field duplicate is listed on the COC as DW-33-FD02 but is reported as DW-33-FD02-DEC2020. No further action is taken.
Were samples preserved properly and received in good condition?	•			Cooler 3.3C, pH <2
Were holding times met?	•			Samples analyzed within 14 days of collection.
Were all requested target analytes reported?	•			Per Worksheet #15.
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?		•		Validation criteria for calibration were based on QSM guidelines. RSD acceptable. See outlier report for RRF exceedances. Nonconformances and qualifications applied manually. Based on professional judgment, the ND results for t-butyl alcohol and bromoform were qualified as estimated (UJ) rather than rejected (R) for low RRF because ICV and LCS performance indicated that the analyses were in control.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Dichlorodifluoromethane, bromomethane, 1,1-dichloroethene, and acetone exceeded QC limits in ICV WG291542-8. See outlier report. Nonconformances and qualifications applied manually.
Were CCVs run at the required frequency and within acceptance criteria?		•		Acetone and methylene chloride exceeded %D criteria in opening CCVs. See outlier report. Qualifications applied manually.
Were Internal Standard retention times and area criteria within method requirements?	•			No issues noted.
Were internal standards spiked for every sample, standard, and QC sample?	•			No issues noted.
Were surrogate recoveries within project acceptance limits?	•			No issues noted.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?	•			Trip blank DW-DW-DEC20201201 submitted with sample set. All target compounds nondetect.
Was an LCS/LCSD pair prepared and analyzed with each batch?		•		Duplicate LCS not analyzed.
Were LCS/LCSD recoveries within project acceptance limits?		•		Exceedance for dichlorodifluoromethane. See outlier report.
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?		•		Not requested with this sample set.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	

Review Questions

Method: E524.2 (Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS)				
Review Questions	Yes	No	NA	Comment
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			DW-33-TAP-DEC2020 and DEC-33-FD02 analyzed as field duplicate pair. All results nondetect.
Were QAPP specified laboratory PQLs achieved?		•		The laboratory's reported LOQs for trichloroethene and vinyl chloride exceed the Project Quantitation Limits.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV exceedances were noted and calibration was not re-performed.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Results for bromoform and t-butyl alcohol were qualified as estimated (UJ) rather than rejected (R) because of low RRF.

Data Validation Report for TN0006

Facility:	D01RI0063-02, Nike PR-79 (Internal)
Event:	PR-79, December 2020
SDG:	TN0006
Guidance Document:	eQAPP Nike PR-79
Prime Contractor:	AECOM, Chelmsford, MA
Project Manager:	Greg Hencir
Contract Laboratory(ies):	Katahdin Analytical Services, Scarborough, ME
Data Review Contractor:	AECOM
Data Review Level:	S2BVEM
Primary Data Reviewer:	Richard Purdy, Project Chemist
Second Reviewer:	Kristin Rutherford, Senior Scientist
Date Submitted:	February 22, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	E524.2
DW-35-BC-DEC2020	TN0006-1	Water	Field Sample/N	X
DW-35-FD03-DEC2020	TN0006-3	Water	Field Duplicate/FD	X
DW-35-TAP-DEC2020	TN0006-2	Water	Field Sample/N	X
DW-39-TAP-DEC2020	TN0006-4	Water	Field Sample/N	X
TB-DW-20201203	TN0006-5	Water	Trip Blank/TB	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at S2BVEM data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the eQAPP Nike PR-79 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by AECOM, Chelmsford, MA; analyses were performed by Katahdin Analytical Services, Scarborough, ME and were reported under sample delivery group (SDG) TN0006. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Extracted Internal Standard
- Field Duplicate RPD
- Lab Blank
- LCS Recovery
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 31 results (9.39%) out of the 330 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency. Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Validation upgraded to Stage 2B per client request.

Analytical Method	Data Reviewer Comment
E524.2	No additional comments; see Checklist for detail.

February 15, 2021

Reviewed by Richard Purdy, Project Chemist, AECOM

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of a minimum of 10% of the reported sample results and method quality control data between the two deliverables.

Reviewed by Kristin Rutherford, Senior Scientist, AECOM

April 07, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method E524.2, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291812-4 (CV)	Acetone	131.9	70 - 130	50 - 150	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-35-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-FD03-DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-39-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
TB-DW-20201203	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Initial Calibration RRF

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICAL GCMS_D 12/10/2020	tert-Butyl alcohol	0.007740				J/UJ	G1	
ICAL GCMS_D 12/10/2020	Bromoform	0.08012				J/UJ	G1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration RRF for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-35-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-35-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-35-FD03-DEC2020	FD	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-35-FD03-DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-35-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-35-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-39-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-39-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
TB-DW-20201203	TB	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
TB-DW-20201203	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
WG291542-8 (IV)	Dichlorodifluoromethane	123.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	Acetone	129.9	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	Bromomethane	130.0	80 - 120	50 - 150	percent	J/UJ	V1	
WG291542-8 (IV)	1,1-Dichloroethene	72.87	80 - 120	50 - 150	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-35-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-35-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-FD03-DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-35-FD03-DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-FD03-DEC2020	FD	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-FD03-DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-35-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-39-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-39-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-39-TAP-DEC2020	N	Bromomethane	1.00	0.500 UMM	0.500 UJ		ug/l	V1
DW-39-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UMM	0.500 UJ		ug/l	V1
TB-DW-20201203	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
TB-DW-20201203	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
TB-DW-20201203	TB	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-DW-20201203	TB	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E524.2, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
DW-39-TAP-DEC2020 (MS)/ WG291812-6	Chloroethane	132.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (MS)/ WG291812-6	Bromomethane	134.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (MS)/ WG291812-6	Trichlorofluoromethane	138.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (MS)/ WG291812-6	Chloromethane	140.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (MS)/ WG291812-6	Dichlorodifluoromethane	156.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Vinyl chloride	134.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Chloroethane	138.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Bromomethane	140.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Trichlorofluoromethane	140.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Chloromethane	142.0	70 - 130	20 - 130	percent	J/None	M	
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Dichlorodifluoromethane	158.0	70 - 130	20 - 130	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method E524.2, MS RPD

The objective of matrix spikes/matrix spike duplicates (MS/MSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. MS/MSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Matrix spikes/matrix spike duplicates results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
DW-39-TAP-DEC2020 (SD)/ WG291812-7	Acetone	24.14	< 20	< 20	rpd	J/UJ	D	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method E524.2, Trip Blank

The purpose of trip blanks is to determine the existence and magnitude of cross-contamination problems resulting from the shipping of samples. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in trip blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
TB-DW-20201203 (TB)/ TN0006-5	Methylene chloride	2.100	< 0.62	< 2.5	ug/l	U/None	T	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Trip Blank for E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-35-FD03-DEC2020	FD	Methylene chloride	2.50	1.40 J	2.50 U		ug/l	T

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: E524.2 Extraction Method: METHOD								
FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
DW-35-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-35-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-35-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-35-FD03-DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-35-FD03-DEC2020	FD	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-FD03-DEC2020	FD	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-35-FD03-DEC2020	FD	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-FD03-DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-FD03-DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-35-FD03-DEC2020	FD	Methylene chloride	2.50	1.40 J	2.50 U		ug/l	T
DW-35-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-35-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-35-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-35-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
DW-35-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
DW-39-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
DW-39-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
DW-39-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
DW-39-TAP-DEC2020	N	Bromomethane	1.00	0.500 UMM	0.500 UJ		ug/l	V1
DW-39-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UMM	0.500 UJ		ug/l	V1
DW-39-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1
TB-DW-20201203	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 UJ		ug/l	V1
TB-DW-20201203	TB	Acetone	2.50	1.20 U	1.20 UJ		ug/l	V2/V1
TB-DW-20201203	TB	Bromoform	0.500	0.250 U	0.250 UJ		ug/l	G1
TB-DW-20201203	TB	Bromomethane	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-DW-20201203	TB	Dichlorodifluoromethane	1.00	0.500 U	0.500 UJ		ug/l	V1
TB-DW-20201203	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 UJ		ug/l	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method E524.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
DW-35-BC-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-35-BC-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V2/V1
DW-35-BC-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-35-BC-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-35-BC-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-35-BC-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-35-FD03-DEC2020	FD	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-35-FD03-DEC2020	FD	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V2/V1
DW-35-FD03-DEC2020	FD	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-35-FD03-DEC2020	FD	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-35-FD03-DEC2020	FD	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-35-FD03-DEC2020	FD	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-35-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-35-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V2/V1
DW-35-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-35-TAP-DEC2020	N	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-35-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
DW-35-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
DW-39-TAP-DEC2020	N	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
DW-39-TAP-DEC2020	N	Acetone	2.50	1.20 U	1.20 UJ	1.20 UJ	V2/V1
DW-39-TAP-DEC2020	N	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
DW-39-TAP-DEC2020	N	Bromomethane	1.00	0.500 UMM	0.500 U	0.500 UJ	V1
DW-39-TAP-DEC2020	N	Dichlorodifluoromethane	1.00	0.500 UMM	0.500 U	0.500 UJ	V1
DW-39-TAP-DEC2020	N	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1
TB-DW-20201203	TB	1,1-Dichloroethene	0.500	0.250 U	0.250 U	0.250 UJ	V1
TB-DW-20201203	TB	Acetone	2.50	1.20 U	1.20 U	1.20 UJ	V2/V1
TB-DW-20201203	TB	Bromoform	0.500	0.250 U	0.250 U	0.250 UJ	G1
TB-DW-20201203	TB	Bromomethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
TB-DW-20201203	TB	Dichlorodifluoromethane	1.00	0.500 U	0.500 U	0.500 UJ	V1
TB-DW-20201203	TB	tert-Butyl alcohol	2.50	1.20 U	1.20 U	1.20 UJ	G1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
D	MS RPD
G1	Initial Calibration RRF
M	MS Recovery
T	Trip Blank
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
U	Undetected: The analyte was analyzed for, but not detected.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
R	The data are rejected due to deficiencies in meeting QC criteria and may not be used for decision making.
B	Blank contamination: The analyte was found in an associated blank above one half the RL, as well as in the sample.
UB	The analyte was also detected in an associated laboratory or field blank at a concentration comparable to the concentration in the sample. The reported result has been requalified as not detected.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

Review Questions

Method: E524.2 (Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?		•		The field duplicate is listed on the COC as DW-35-FD03 but is reported as DW-35-FD03-DEC2020. No further action is taken.
Were samples preserved properly and received in good condition?	•			Cooler 2.6C. Sample pH<2.
Were holding times met?	•			All samples analyzed within 14 days.
Were all requested target analytes reported?	•			Per Worksheet #15.
Was the GC/MS system properly tuned based on method criteria?	•			
Was instrument tuning completed every 12 hours during sample analysis?	•			
Was the Calibration within acceptance criteria?		•		Validation criteria for calibration were based on QSM guidelines. RSD acceptable. See outlier report for RRF exceedances. Nonconformances and qualifications applied manually. Based on professional judgment, the ND results for t-butyl alcohol and bromoform were qualified as estimated (UJ) rather than rejected (R) for low RRF because ICV and LCS performance indicated that the analyses were in control.
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Dichlorodifluoromethane, bromomethane, 1,1-dichloroethene, and acetone exceeded QC limits in ICV WG291542-8. See outlier report. Nonconformances and qualifications applied manually.
Were CCVs run at the required frequency and within acceptance criteria?		•		Acetone exceeded %D criteria in opening and closing CCVs. See outlier report. Qualifications applied manually.
Were Internal Standard retention times and area criteria within method requirements?	•			No issues noted.
Were internal standards spiked for every sample, standard, and QC sample?	•			No issues noted.
Were surrogate recoveries within project acceptance limits?	•			No issues noted.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes in the field blank less than MDL?		•		Methylene chloride detected in the associated trip blank. See outlier report.
Was an LCS/LCSD pair prepared and analyzed with each batch?		•		LCS not analyzed in duplicate.
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	
Was a MS/MSD pair prepared with each batch?	•			Sample DW-39-TAP-DEC2020 analyzed as MS/MSD pair.
Were MS/MSD recoveries within project acceptance limits?		•		Several compounds exhibited high recoveries in the MS and/or MSD analyses. No qualification necessary as these compounds were not detected in sample DW-39-TAP-DEC2020.

Review Questions

Method: E524.2 (Volatile Organic Compounds by Purge & Trap Capillary Column GC/MS)				
Review Questions	Yes	No	NA	Comment
Was the MS/MSD RPD within project acceptance limits?		•		Acetone exceeded RPD requirements. No data qualification is necessary for ND results based on QSM criteria.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			Sample DW-35-BC-DEC2020 and DW-35-FD03-DEC2020 collected as field duplicate pair.
Were QAPP specified laboratory PQLs achieved?		•		The laboratory's reported LOQs for trichloroethene and vinyl chloride exceed the Project Quantitation Limits.
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?		•		ICV exceedances were noted and calibration was not re-performed. See outlier reports for qualifications.
Were any data recommended for rejection (exclusion) in the data validation process?		•		Results for bromoform and t-butyl alcohol were qualified as estimated (UJ) rather than rejected (R) because of low RRF.