

Technical Memorandum

Demonstrate Plume Capture – Downgradient Delineation

EPA SOW Phase I Task 3

Shepley's Hill Landfill

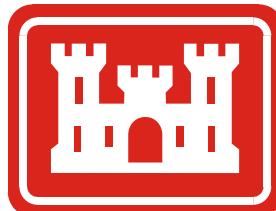
Former Fort Devens Army Installation

BRAC Legacy Sites

Devens, Massachusetts

Contract W912WJ-17-C-0010

Prepared for



U.S. Army Corps of Engineers
New England District
696 Virginia Rd.
Concord, Massachusetts 01742

July 2018



MEMORANDUM

Date: July 24, 2018
To: Carol Keating (EPA)
CC: Robert Simeone (Army)
Penelope Reddy, Dan Groher, Mike Kulbersh (USACE)
David Chaffin (MassDEP)
From: James Ropp, PE (KGS)
Subject: Technical Memorandum to Delineate the Lateral and Vertical Extent of the Contamination Downgradient of Extraction System along Sculley Road, conducted per the February 24, 2016 USEPA SOW for Shepley's Hill Landfill, Phase I Task 3

1.0 INTRODUCTION

On behalf of the U.S. Army Corps of Engineers (USACE) New England District (NED), KOMAN Government Solutions, LLC (KGS), has prepared this Technical Memorandum to document results of Additional Work conducted in accordance with Phase I, Task 3 of the February 24, 2016 U.S. Environmental Protection Agency (USEPA) Scope of Work (SOW). Phase I Task 3 required the Army to delineate the lateral and vertical extent of contamination downgradient of the Shepley's Hill Landfill (SHL) Arsenic Treatment Plant (ATP) along Sculley Road. This Phase 1 Task 3 Technical Memorandum is provided to replace the December 2016 Phase 1 Task 3 Technical Memorandum disapproved by EPA on February 10, 2017.

a. Site Description

The former Fort Devens Army Installation is located approximately 35 miles northwest of the city of Boston, within the towns of Ayer, Shirley (Middlesex County), Harvard and Lancaster (Worcester County), Massachusetts. The former Fort Devens was established in 1917 for military training and logistical support during World War I. Fort Devens became a permanent base in 1931 and continued service until its Base Realignment and Closure (BRAC) Committee closure in 1996. **Figure 1** depicts the vicinity of the former base and surrounding area.

The SHL site encompasses approximately 84 acres in the northeast corner of the former Fort Devens Main Post (**Figure 1**). The landfill is bordered to the northeast by Plow Shop Pond, to the west by Shepley's Hill, to the south by recent commercial development, and to the east by

land formerly containing a railroad roundhouse. Nonacoicus Brook, which drains from Plow Shop Pond, is located north of the landfill. **Figure 2** depicts the SHL site plan.

SHL was reportedly operating by the early 1940s; however, evidence suggests earlier usage, possibly as early as the mid-nineteenth century. The landfill received waste materials from the former Fort Devens and contains a variety of materials including, but not limited to general refuse, sanitary wastes, demolition debris, asbestos, and incinerator ash. The Massachusetts Department of Environmental Protection (MassDEP) approved the landfill closure plan in 1985. Closure consisted of capping the landfill with a 30 to 40-mil polyvinyl chloride (PVC) membrane, covering the cap with soil and vegetation, and installing gas vents. Closure also included installation of wells to monitor groundwater quality around the landfill and construction of drainage swales to control surface water runoff. MassDEP issued a Landfill Capping Compliance Letter approving the closure in February 1996.

Subsequent to closure of the landfill, the Army completed Remedial Investigations (RIs) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to evaluate soil, sediment, surface water, and groundwater conditions at and in the immediate vicinity of the landfill. The results confirmed the presence of various contaminants, particularly certain inorganics, including arsenic, and volatile organic compounds (VOCs), in groundwater, sediment, and surface water at and adjacent to SHL. Due to contaminant concentrations greater than MCLs, the Army installed and began operating a groundwater extraction and treatment system in March 2006 as a contingency remedy component to address groundwater contamination (dissolved arsenic, in particular) emanating from the northern portion of the landfill (CH2M Hill, 2005). In 2013, the Army established Land Use Controls (LUCs) for the Northern Impact Area (NIA) to restrict groundwater use (Sovereign, 2013). The LUC area is shown on **Figure 3**.

b. EPA Scope of Work Summary

The November 2017 Phase 1 Task 3 Technical Memorandum summarizes results of the Additional Work performed by Army per requirements set forth in EPA's February 24, 2016 SHL SOW. Specifically, Phase 1 identified five tasks and associated subtasks necessary to assess whether the existing arsenic extraction and treatment system as designed, constructed and operated provides sufficient containment/capture of the contamination migrating from SHL. Task 3 identified the Additional Work required to delineate the lateral and vertical extent of contamination downgradient along Sculley Road.

This work was conducted to determine that the selected Remedial Action at the SHL is protective of human health and the environment, and the remedy is operating as intended. The fieldwork for the overall EPA SOW investigation was conducted during August and September 2017 and included vertical profile groundwater sampling from selected direct-push soil boring locations.

In the downgradient (Sculley Road) area, six soil borings were advanced using Geoprobe® direct-push drill method for vertical groundwater profile sample collection. **Figure 4** shows the location of the downgradient Transect D-D' and its associated sampling locations.

2.0 FIELD PROCEDURES

a. Geoprobe® Vertical Profiling Procedure

Soil borings were advanced to refusal at locations identified in the EPA SOW (**Figure 4**). The locations of two borings, SB-17-17 and SB-17-18, were adjusted slightly based on field conditions. Geoprobe® drilling is a direct-push technology which is used to advance tooling and sampling screen points to desired subsurface depths. A track-mounted Geoprobe drill rig Model #7822 was used for Task 3. Tooling sizes used for vertical profiling during this investigation included a Screen Point 16 (SP16) sampler (1.5-inch OD x 0.625-inch ID) and a Screen Point 22 (SP22) sampler (2.25-inch OD x 1.5-inch ID).

Completed sampling locations were abandoned by filling the entire length of the borehole with a cement/bentonite grout mixture. Grout was mixed to proper consistency with potable water and pumped through a tremie pipe with a positive displacement pump from the bottom of the boring up to the surface.

b. Groundwater Sample Collection Procedure

Sample acquisition and analysis was conducted consistent with the EPA SOW and the Revised Final SHL LTMMMP Update (Sovereign, 2015). Non-dedicated, variable speed, peristaltic pumps were used to collect samples during vertical profiling below the water table. The objectives and methods for this procedure are described in USEPA's Region 1 Guidance Document entitled, "Low Stress (low-flow) Purgung and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells", (USEPA, Region 1, 2010). Flow rates of 0.1 to 0.5 liters per minute (L/min) were used; however, this was dependent on site-specific hydrogeology (USEPA, 2010).

Groundwater profile samples were field-filtered using a 0.45- μm filter for analysis of dissolved arsenic, dissolved metals, dissolved organic carbon (DOC), chloride, sulfate, and alkalinity. Combinations of in-line filters (1-, 5-, 10-micron pore size) were attached to the outlet of the sample tubing prior to connection to the flow cell in order to avoid damage to the flow cell electrodes from the high levels of turbidity typically encountered during sampling from temporary profile screens. Field measurements including dissolved oxygen, temperature, pH, oxidation-reduction potential (ORP), and specific conductance were collected prior to sample acquisition.

Vertical profiles of groundwater contaminants were obtained by collecting groundwater samples at 10-ft intervals from the water table to the bottom of each boring. Groundwater samples were collected through the Geoprobe® using Screen Point 16 (SP16) or Screen Point 22 (SP22) Groundwater Samplers. The SP-16/SP-22 Groundwater Sampler is a direct push device consisting of a disposable, PVC 10-slot (0.010-inch) screen and expendable drive point that is driven to depth within a sealed, steel sheath and then deployed for the collection of representative groundwater samples. The sampler is threaded onto the leading end of a Geoprobe® probe rod and advanced into the subsurface. When the desired sampling interval was reached, extension rods were sent downhole until the leading rod contacts the bottom of the sampler screen. The tool string was then retracted to expose approximately 24 inches of the screen while the screen was held in place with the extension rods. A groundwater sample was

then collected using either a peristaltic pump or Waterra pump, dependent on depth of the water table below ground surface. After each depth interval, the tooling was (1) retracted to the top, (2) sampling screen reset in the sheath, and (3) a new expendable drive point installed. The tool string was then retracted and tooling reset to the next interval depth and a process repeated until refusal.

Purging of the tooling was conducted by removing twice the tooling volume prior to connecting the sampling tubing to the flow cell. The tooling volume was calculated as the volume of the tubing from the surface to the screen, plus the interior of the screen. The sample tubing or down-hole pump inlet was placed at the mid-depth of the temporary profiler screen for purging, or the top of the screen if the mid-depth could not be achieved (due to the difficulty in threading the pump tubing into the narrow opening of the sampling tooling at depth). As needed during the low-flow sample stabilization procedure, high-capacity, in-line filters (10-micron, 5-micron, 1-micron) were added singly or in series to the sampling tubing prior to the flow cell in order to reduce the sample turbidity to below 10 Nephelometric Turbidity Units (NTU). Prior to sample collection, a 0.45-micron filter was added last in the chain of other added filters and the sample was collected.

Sampling and analysis were consistent with methods identified above, and in the *SHL LTMMMP Update* (Sovereign, 2015). Samples were submitted for the analytical parameters as listed in Table 3 of the *SHL LTMMMP Update*.

Steps for sample acquisition included:

- Downhole placement of 0.25-inch disposable diameter high density polyethylene tubing (HDPE) through the tooling to the desired depth for water sample collection was performed per interval.
- Attachment of HDPE tubing to a T-valve prior to the flow cell to permit acquisition of a groundwater sample for turbidity measurement using a LaMotte or Hach meter; if turbidity was above 10 NTU, one or more filters (10-miron, 5-micron, 1-micron) were attached prior to the T-valve to bring turbidity reading to < 10 NTU.
- Attachment of tubing to a multi-parameter water quality field meter (i.e., YSI) at the ground surface to record temperature, pH, DO, specific conductivity, and ORP.
- Flow rates were measured during parameter stabilization. Initial and post depth to water measurements from top of tooling was recorded. Tooling diameter did not allow for continuous measurements once tubing was placed inside of tooling. Low-flow water quality parameters were recorded, and forms are provided in **Attachment 1**.
- Samples collected for dissolved metals, including arsenic and DOC, were field filtered using an in-line, 0.45-micron filter subsequently placed after other in-line filters (1-, 5- and 10- micron) that were used (as needed) to stabilize turbidity.

- Groundwater samples were collected by filling sample containers directly from tubing after detachment of multi-parameter field meter. In accordance with the QAPP Addendum, groundwater samples were collected in specified bottles (both preserved and unpreserved) and stored in coolers below 4°C.
- Post groundwater sample collection, the tubing was removed from the borehole and a post-sampling depth-to-water inside the tooling was recorded. An open-borehole depth-to-water reading was also obtained if the borehole did not collapse after removal of the tooling.
- Groundwater samples were collected at the first interval just below the water table and every 10 feet (ft) thereafter until refusal was encountered.

No soil samples were collected for soil classification or laboratory analysis.

c. Sample Identification (ID)

Samples were assigned a unique sample identifier. Field personnel generated a label for each sample container that contained the sample identifier, date and time of sample collection, the sampler's initials, analytical parameters, and type of preservation used. The sampler initialed any change in the label information prior to the sample collection. A sample numbering system identified each sample collected and submitted for analysis. The purpose of the numbering system was to assist in the tracking of samples and to facilitate retrieval of analytical results. The sampling number was used on sample labels, sample tracking forms, chain of custody forms, field logbooks, and other applicable documentation. The sample ID for vertical profile samples included the soil boring location ID, year of profile event, and interval depth the sample was collected. Duplicate samples were collected without revealing the parent sample ID to the laboratory. Matrix spike (MS)/matrix spike duplicate (MSD) sample IDs were indicative of the parent sample ID.

d. QA/QC Control Samples

Quality assurance (QA)/quality control (QC) samples were collected during the sampling event. The following subsections specify the type and quantity of samples collected for QA/QC purposes.

Field Duplicate Samples

Field duplicate samples were collected and submitted for analysis in conjunction with the analyses associated with primary field samples. Field duplicates are additional samples subjected to the same collection, preparation, and analysis methods as the original sample, but are identified with a unique identification number so that they are blind to the laboratory. These samples evaluate the precision of sample collection, field sample preparation, and laboratory analysis. Field duplicates were collected at a frequency of 10% of the samples (1 duplicate per 10 samples). Locations were determined in the field and duplicate samples were collected concurrently with field samples.

Rinsate Blanks

Sampling methods included the use of both dedicated and non-dedicated sampling equipment. Non-dedicated sampling equipment (i.e., used in more than one location or depth interval)

required decontamination. Following decontamination, rinsate blanks were collected and submitted for analysis to determine the potential for cross-contamination from the sampling equipment. Rinsate blanks were prepared, as needed, at a frequency of one per drilling task. Rinsate blanks were prepared by decontaminating the field equipment, followed by pumping de-ionized water through the submersible pump and capturing the rinsate water in a sample bottle.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

MS/MSD samples were submitted for analyses in conjunction with primary field samples. Results from MS/MSD samples were used to evaluate the potential for sample matrix interferences versus laboratory analytical errors, as well as to assess the accuracy of the analysis. MS/MSD samples were collected at a frequency of 5% for all analyses (1 per 20 samples). Samples from MS/MSD locations had three times the standard volume collected.

e. Equipment Decontamination

Drilling Equipment

The downhole Geoprobe drill tools were decontaminated between boring locations, in accordance with EPA and MassDEP requirements. A self-contained tub was used to steam clean all downhole tooling within a secured area of the ATP. Tooling included direct push rods and SP22 or SP16 samplers. A potable municipal water source from the ATP was connected via water hosing to a gasoline-operated steam cleaner for steam cleaning activities. Steam cleaning of drill equipment was performed between each of the soil boring locations.

Sampling Equipment

Sampling equipment was decontaminated at the site before use, between sampling locations, and after its last use at the site. Procedures for decontaminating sampling equipment were in accordance with guidance in USEPA Region 1, 2010, "Low Stress (low-flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells" and is summarized below.

Groundwater gauging equipment, sampling screens and non-dedicated sampling equipment and materials were decontaminated using the following procedure:

- Physical removal, then rinse with tap water immediately after use
- Detergent scrub (Alconox) with brushes immediately after use with periodic solution change out
- Rinse with tap water to remove the detergent solution
- Rinse well with de-ionized water
- Light spray down with methanol, as needed
- Air dry
- Rinse with deionized water
- Cover with aluminum foil (if not to be used immediately).

The water level probe and tape were decontaminated by the above referenced procedure, substituting air drying with drying the probe tape with a clean paper towel.

New Teflon-line polyethylene tubing was used at each interval of each boring location significantly reducing decontamination requirements.

Equipment or supplies that could not be effectively decontaminated were disposed of after sampling.

f. Investigative-Derived Waste (IDW)

No IDW was generated from drilling activities at the Sculley Road downgradient transect. Excess purge water generated during profile sampling activities was returned to the ground near the point of collection, consistent with USEPA and MassDEP requirements.

g. Field Activity Summary

This section presents field investigation activities that were conducted in accordance with EPA SOW Phase I Task 3. The objective of the Task 3 fieldwork was to delineate the lateral and vertical extent of the dissolved arsenic downgradient of the extraction system along Sculley Road.

Vertical profile sampling was performed along Sculley Road at six locations equally spaced along the downgradient transect D-D', located between existing groundwater monitoring wells SHM-07-03 and SHM-99-31A/B/C, as identified in the EPA SOW Phase I Task 3.b. The sampling locations along the downgradient transect were adjusted as necessary to avoid overhead and subsurface utilities. **Figure 4** identifies the downgradient boring locations.

Monitoring wells in the immediate vicinity of the boring locations were gauged prior to drilling to determine the approximate depth to water at each location. Borings were advanced using Geoprobe® direct push drilling methods. Groundwater profile samples were collected every 10 ft starting just below the water table and continued to refusal. Sampling logs are provided in **Attachment 1**.

A cross section (profile) was prepared for the downgradient transect along Sculley Road (see **Section 3.0**). The 2017 vertical groundwater profiling chemistry results are shown on the cross section for vertical extent delineation.

The groundwater samples were transported to a certified laboratory for analysis. Chemical analyses included the following:

- Dissolved Arsenic, EPA Method 6020A (field filtered)
- Dissolved Metals, Iron, Manganese, EPA Method 6010C (field filtered)
- Dissolved Organic Carbon (DOC), SM5310B (field filtered)
- Alkalinity, SM2320B
- Chloride, SM4500CLC
- Sulfate, EPA Method 300

Vertical profile groundwater chemistry results are provided in the laboratory reports included in **Attachment 2**. Data validation reports are presented in **Attachment 3**.

3.0 GROUNDWATER PROFILING RESULTS

Field work for USEPA's SOW Phase I Tasks 1 to 3 was conducted from August 15 to September 15, 2017. The field work for Task 3 was scoped to delineate the lateral and vertical

extent of arsenic contamination downgradient of the arsenic extraction system along Sculley Road.

The Task 3 (downgradient) borings were advanced between September 12 and September 15, 2017 using two drill rigs. Locations of the six soil borings are provided on **Figure 4**, Transect D-D'. Vertical profile groundwater samples were collected every 10 feet from the water table to refusal and analyzed for dissolved arsenic, dissolved metals, DOC, alkalinity, chloride, and sulfate. The laboratory and field parameter results for the vertical groundwater samples collected from SB-2017-13, SB-2017-14, SB-2017-15, SB-2017-16, SB-2017-17, and SB-2017-18 are presented in **Tables 1 through 6**.

Plan views of the lateral extent of arsenic contamination along Sculley Road and in the NIA are shown on **Figure 5** and **Figure 6**, respectively. Due to arsenic concentrations greater than 150 µg/L on the eastern edge of Transect D-D' (e.g., 250 µg/L in SB 2017-18 at 72-74 feet below ground surface), the delineation of arsenic concentrations on **Figures 5** and **6** include sampling data collected during the long-term groundwater monitoring program at existing wells to the east (SHM-99-31A/B/C and SHM-99-32X). The lower concentrations to the east (e.g., 59 µg/L in SHM-99-32X) provides sufficient delineation of the lateral extent of contamination along Sculley Road in accordance with the Work Plan (KGS, 2017).

The vertical profile of arsenic concentrations along Transect D-D' is shown on **Figure 7** and **Figure 8**. Chemical results for iron and DOC are also presented in the vertical profile on **Figure 7**. Data sources used in **Figures 5** through **8** include 2017 vertical profile groundwater data at soil boring locations and 2017 LTM groundwater data at existing monitoring wells. If 2017 data were not available at a particular monitoring well, then the most recent historical groundwater data were used.

Boring locations SB-2017-17 and SB-2017-18 are located approximately 600 feet downgradient of the Shepley's Hill Landfill extraction wells. SB-2017-17 encountered refusal at approximately 134 ft above mean sea level (msl) and SB-2017-18 encountered refusal at approximately 119 ft msl. At SB-2017-18, the easternmost profile location of Transect D-D', the highest arsenic concentration was 250 µg/L at 72 to 74 feet bgs.

Boring SB-2017-16 encountered refusal at approximately 156 ft msl. SB-2017-16 is located near monitoring well SHM-05-39B (dissolved arsenic was 293 µg/L in fall 2015) and the greatest arsenic vertical profile concentration of 1,300 µg/L was detected at 52 to 54 ft bgs (**Figure 5** and **Figure 8**).

Boring SB-2017-14 and SB-2017-15 contained the highest arsenic concentrations along Sculley Road, at 2,000 µg/L and 2,100 µg/L, respectively. The highest arsenic concentrations in boring SB-2017-15 were in the samples collected at 34 and 39 ft bgs (approximately 195 to 185 ft msl). This boring reached refusal at 39 ft bgs (approximately 185 ft msl). Wells SB-2017-14 and SB-2017-15 are located on either side of SHM-05-40X, which had a dissolved arsenic concentration of 2,800 µg/L in spring 2016 (**Figure 5**). Boring SB-2017-14 had its maximum arsenic value at the interval from 22 to 24 ft bgs (205 ft msl), located just below the observed water table.

Samples collected from SB-2017-13, located at the western end of Transect D-D', indicated low arsenic and iron concentrations when compared to SB-2017-14 and SB-2017-15. Well SHM-07-03 had a dissolved arsenic concentration of 3.2 µg/L in spring 2016.

4.0 REFERENCES

CH2M Hill 2005. *Explanation of Significant Differences, Groundwater Extraction, Treatment, and Discharge Contingency Remedy for Shepley's Hill Landfill, Fort Devens, Massachusetts.* April.

KOMAN Government Solutions, LLC (KGS), 2017. *Final Work Plan, Shepley's Hill Landfill, Supplemental Investigation to Demonstrate Plume Capture.* Prepared for the U.S. Army Corps of Engineers New England District. August.

KGS, 2017. Transmittal letter to Ms. Carol Keating, U.S. Environmental Protection Agency, et al. re: Data Validation Reports for Spring 2017 LTM, Shepley's Hill Landfill, Former Fort Devens Army Installation, Devens, MA. August 17.

KGS, 2018. Letter to Ms. Carol Keating, U.S. Environmental Protection Agency, re: Validated Data Results from Fall 2017 LTM Event, Shepley's Hill Landfill, Former Fort Devens Army Installation, Devens, MA. January 19.

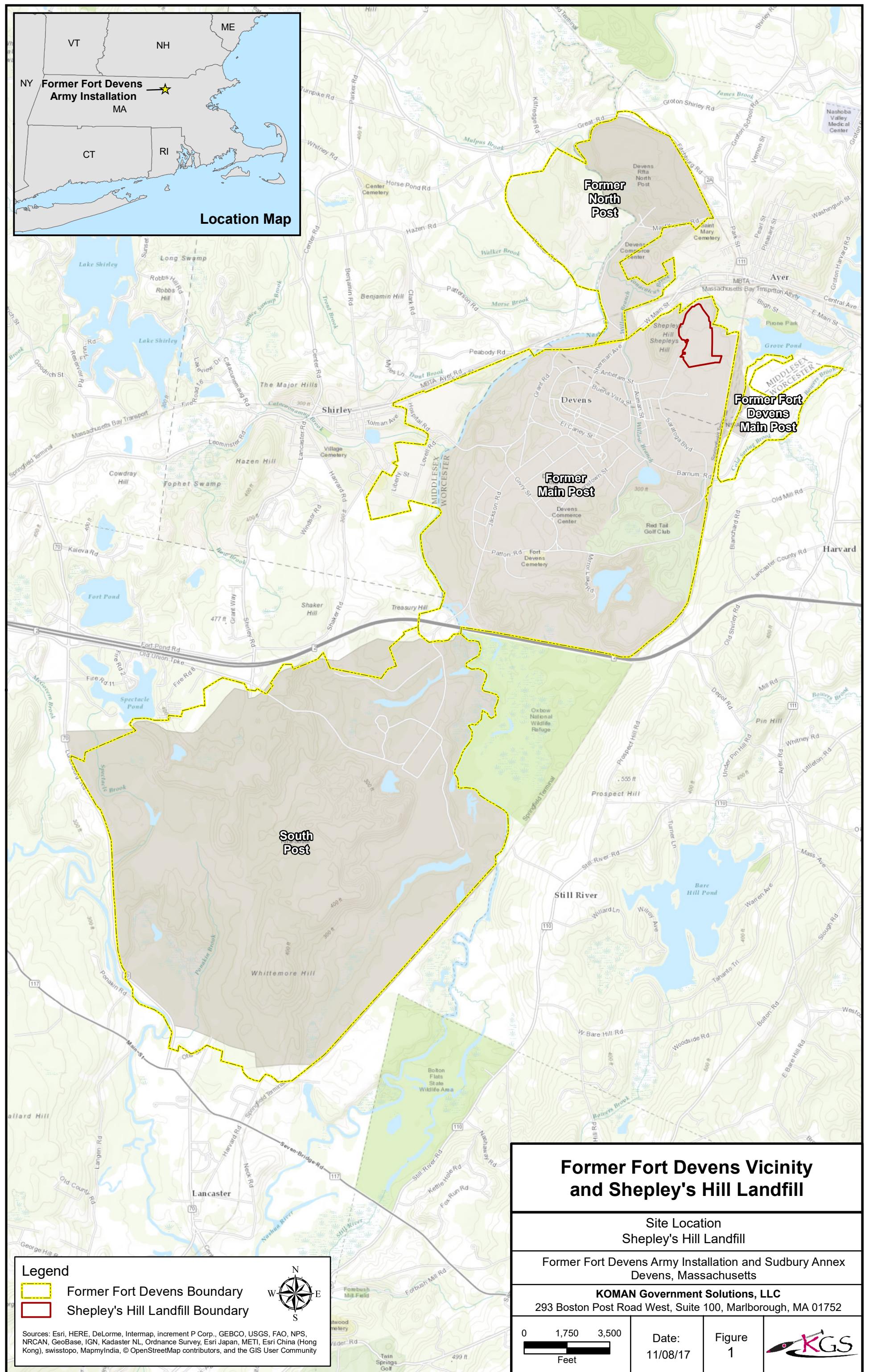
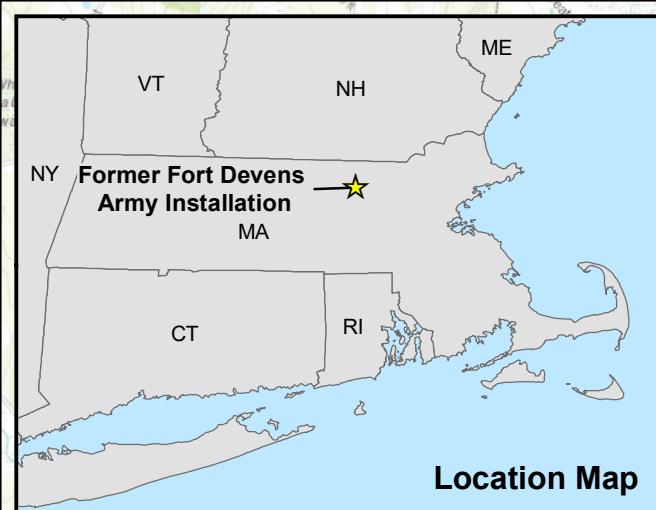
Sovereign Consulting, Inc. (Sovereign), 2015. *Long-Term Monitoring and Maintenance Plan Update, Shepley's Hill Landfill, Former Fort Devens Army Installation, Devens, Massachusetts.* Prepared for USACE-NAE. Revised Final. September.

Sovereign, 2013. *Explanation of Significant Differences, Shepley's Hill Landfill Superfund Site, Former Fort Devens Army Installation, Land Use Controls to Restrict Groundwater Use, Devens, Massachusetts.* Prepared for the USACE. December.

United States Environmental Protection Agency (USEPA). 2016. Letter to William O'Donnell, Department of the Army, re: Former Fort Devens Installation – Dispute Resolution, 2015 Devens Five Year Review (FYR) Report. February 24.

USEPA 2010. *Low Stress (Low Flow) Purg ing and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells.* EQASOP-GW 001. January.

FIGURES



Former Fort Devens Vicinity and Shepley's Hill Landfill

Site Location
Shepley's Hill Landfill

Former Fort Devens Army Installation and Sudbury Annex
Devens, Massachusetts

KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100, Marlborough, MA 01752

0 1,750 3,500
Feet

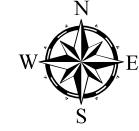
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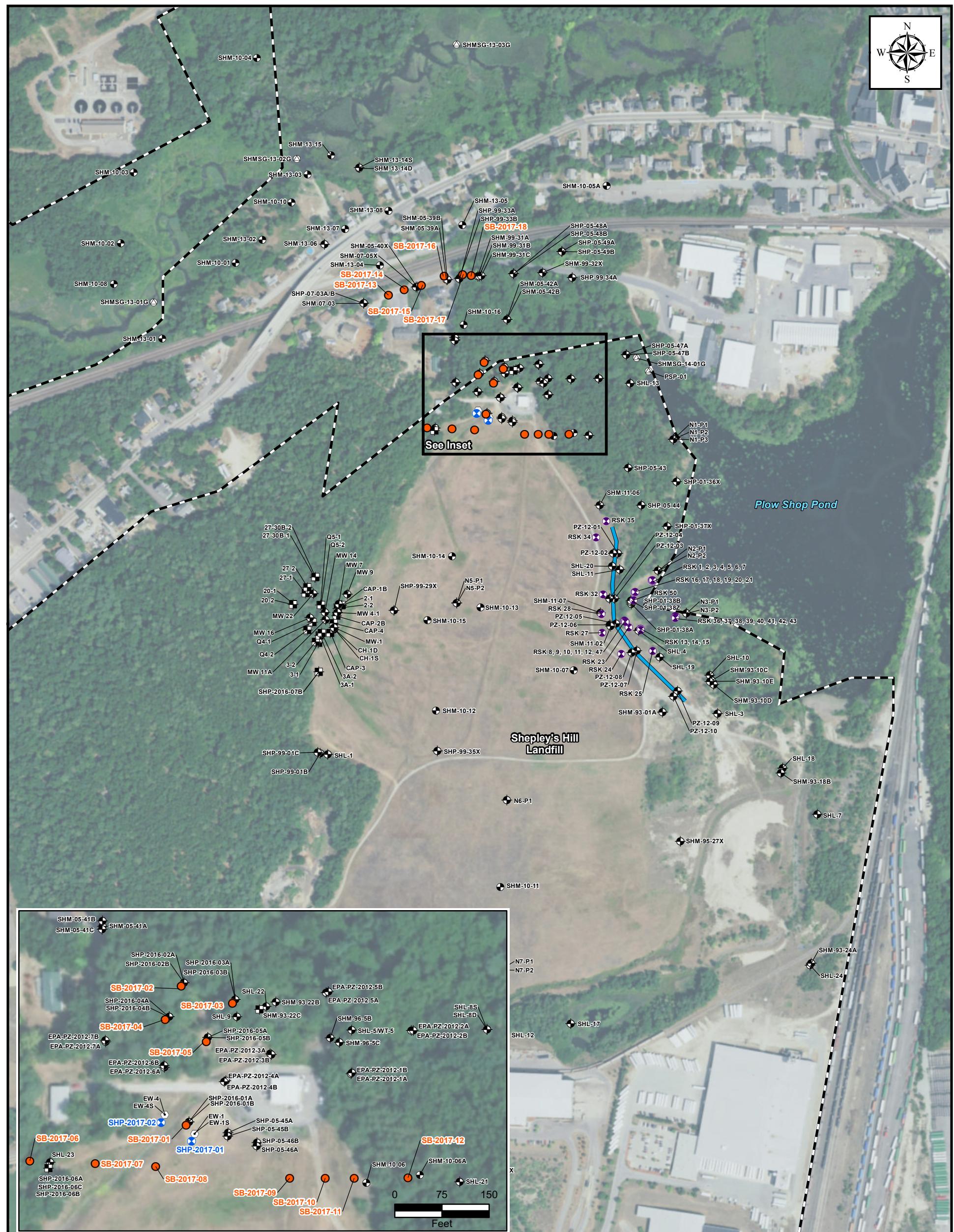


Legend

- [Yellow Box] Former Fort Devens Boundary
- [Red Box] Shepley's Hill Landfill Boundary



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCan, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Legend

- New Boring Location
 - New Piezometer Location
 - Overburden Monitoring Well/Piezometer
 - Groundwater Profiling Location/Monitoring Well
 - Monitoring Well
 - Bedrock Monitoring Well
 - Bedrock Study Core
 - Extraction Well
 - Stream Gauge
 - Barrier Wall
 - Former Fort Devens Boundary

Shepley's Hill Landfill Site Plan

New Boring Locations for Technical Memorandum, Phase I, Tasks 1-3

Former Fort Devens Army Installation and Sudbury Annex Devens, Massachusetts

KOMAN Government Solutions, LLC
3 Boston Post Road West, Suite 100, Marlborough, MA 01752

References: Sovereign/HGI | TMMP 2015

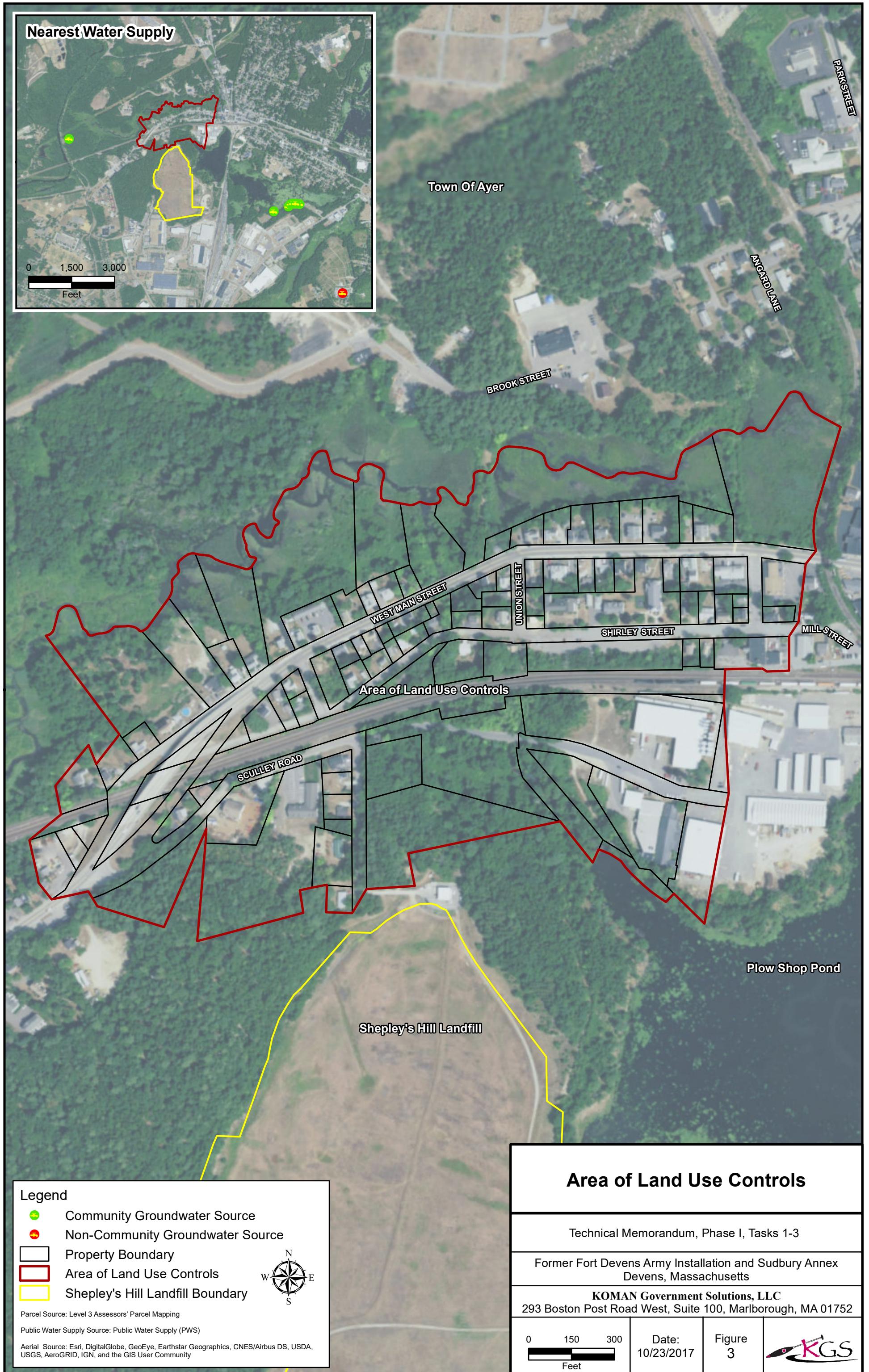
Aerial Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Date:
10/23/2017

Figure 2



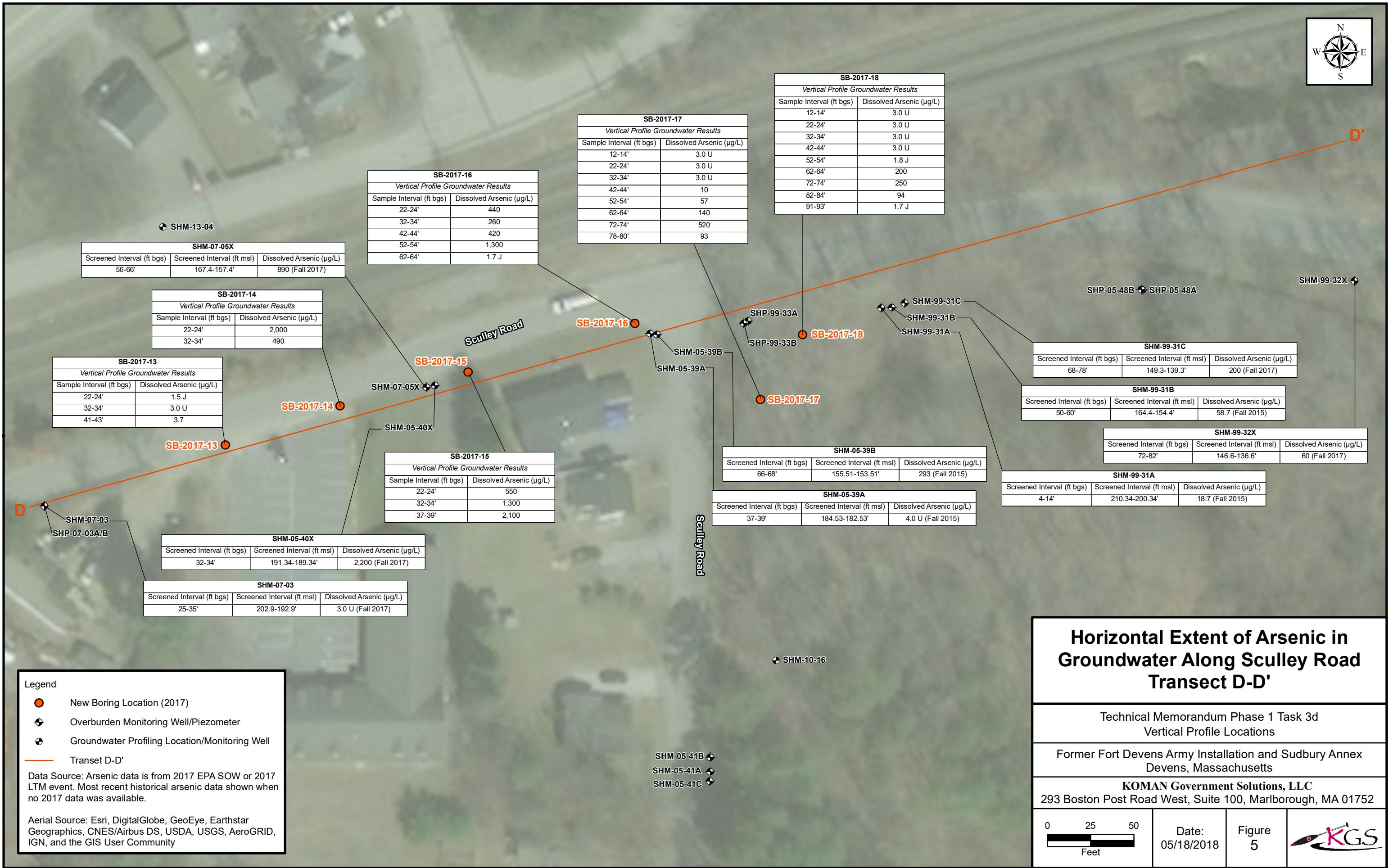
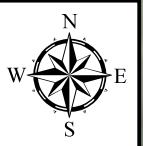


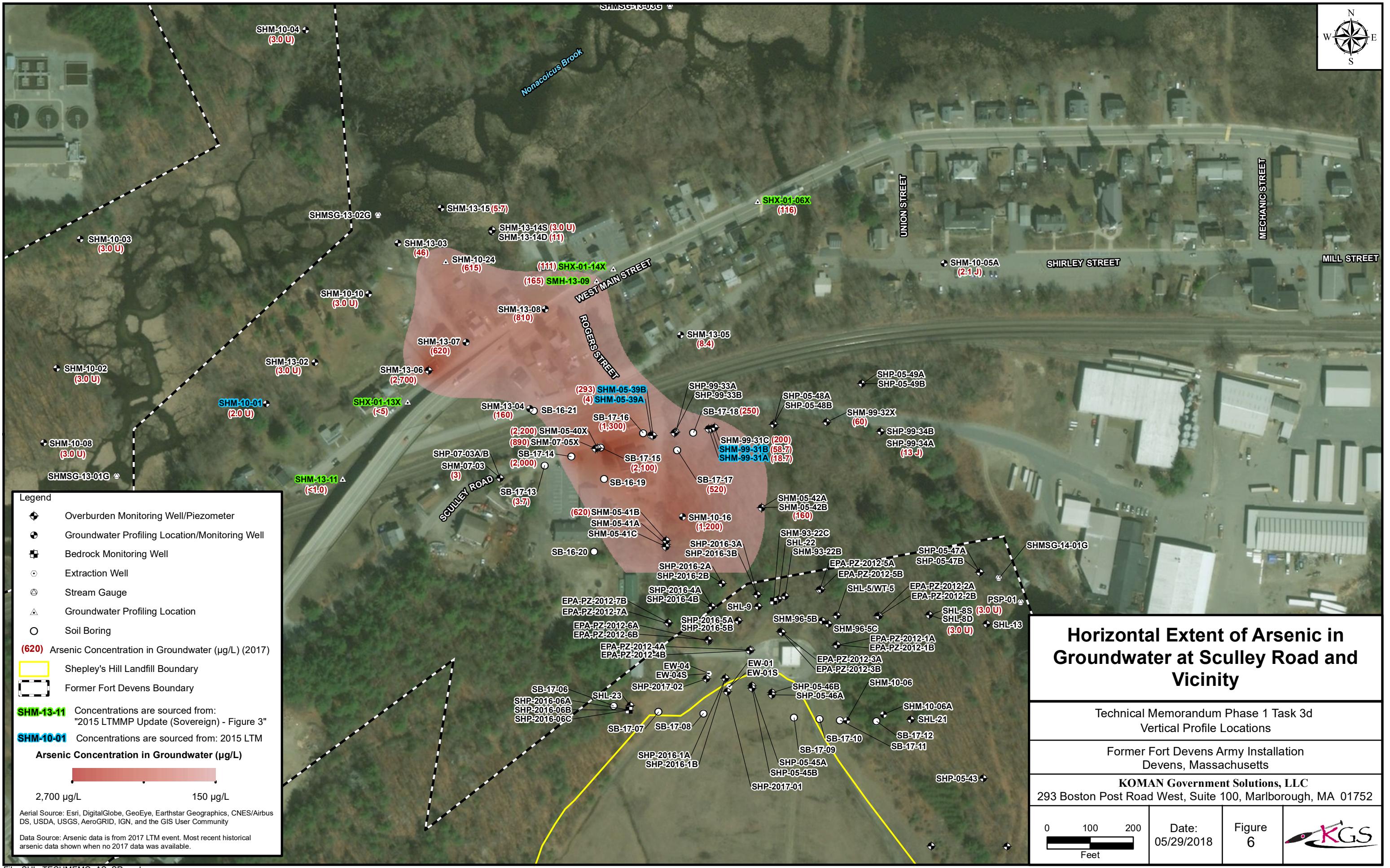
**Legend**

- New Boring Location
- ◆ Overburden Monitoring Well/Piezometer
- Groundwater Profiling Location/Monitoring Well

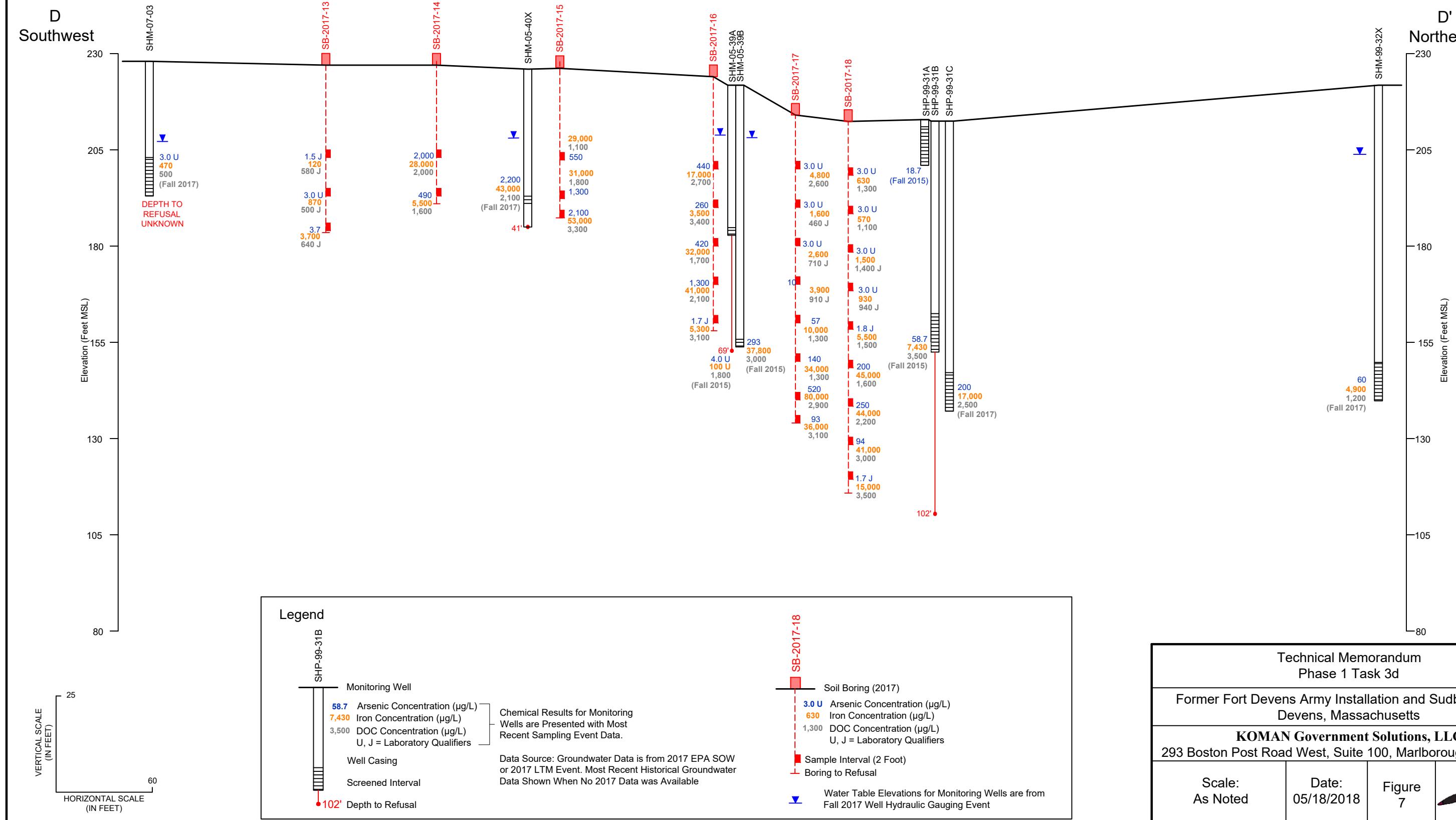
Transect D-D'

Geoprobe Vertical Profile LocationsTechnical Memorandum Phase 1 Task 3d
Vertical Profile LocationsFormer Fort Devens Army Installation and Sudbury Annex
Devens, MassachusettsKOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100, Marlborough, MA 01752Aerial Source: Esri, DigitalGlobe,
GeoEye, i-cubed, USDA FSA, USGS, AEX,
Getmapping, Aerogrid, IGN, IGP,
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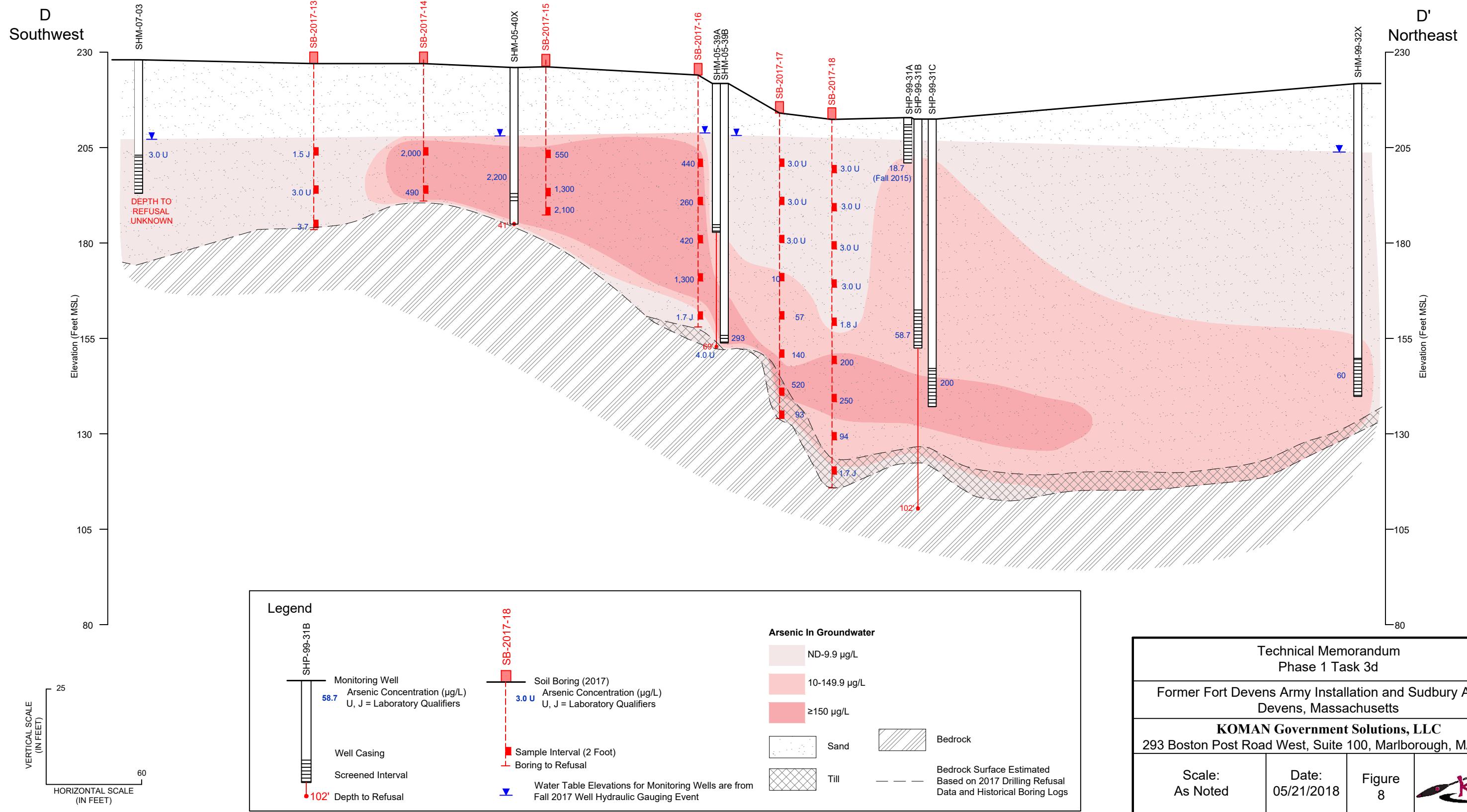


Vertical Extent of Arsenic, Iron and DOC in Groundwater Along Sculley Road and Vicinity



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Vertical Extent of Arsenic in Groundwater Along Sculley Road and Vicinity



TABLES

Table 1
SB-2017-13
Shepley's Hill Landfill Downgradient Location - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143134-12		680-143134-13		680-143134-14		680-143134-15		680-143134-16	
	Client Sample ID		SB-2017-13-22-24		SB-2017-DUP-09		SB-2017-13-32-34		SB-2017-DUP-10		SB-2017-13-41-43	
Method	Collection Date		9/15/2017		9/15/2017		9/15/2017		9/15/2017		9/15/2017	
Dissolved Metals	Analyte	Units										
6010C	Iron	µg/L	120		120		870		880		3,700	
6010C	Manganese	µg/L	86		90		160		160		1,100	
6020A	Arsenic	µg/L	1.5	J	3.0	U	3.0	U	3.0	U	3.7	
Miscellaneous Parameters												
9056A	Chloride	mg/L	130		130		340		340		6.5	
9056A	Sulfate	mg/L	9.9		9.8		5.3		5.2		2.7	
9060	DOC	mg/L	0.58	J	1.1		0.5	J	0.49	J	0.64	J
SM 2320B	Alkalinity	mg/L	24		23		12	U	13	U	24	
Field Parameters												
	Temperature	°C	17.59		--		17.11		--		17.56	
	pH	pH	6.57		--		6.02		--		6.17	
	Specific Conductance	us/cm	404		--		893		--		61	
	ORP	mV	218.9		--		205.9		--		117.8	
	Dissolved Oxygen	mg/L	2.73		--		2.21		--		0.29	
	Turbidity*	NTU	0.87		--		0.89		--		0.97	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

Turbidity* = samples collected with 10 micron in-line filter.

Table 2
SB-2017-14
Shepley's Hill Landfill Downgradient Location - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143134-9	680-143134-11	
	Client Sample ID		SB-2017-14-22-24	SB-2017-14-32-34	
Method	Collection Date		9/14/2017	9/14/2017	
Dissolved Metals	Analyte	Units			
6010C	Iron	µg/L	28,000	5,500	
6010C	Manganese	µg/L	1,500	1,700	
6020A	Arsenic	µg/L	2,000	490	
Miscellaneous Parameters					
9056A	Chloride	mg/L	39	4.7	
9056A	Sulfate	mg/L	3.1	3.6	
9060	DOC	mg/L	2.0	1.6	
SM 2320B	Alkalinity	mg/L	44	43	
Field Parameters					
	Temperature	°C	16.99	17.03	
	pH	pH	6.82	6.03	
	Specific Conductance	us/cm	212	86	
	ORP	mV	-30.9	64.3	
	Dissolved Oxygen	mg/L	0.25	0.73	
	Turbidity*	NTU	0.92	0.89	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

Turbidity* = samples collected with 10 micron in-line filter.

Table 3
SB-2017-15
Shepley's Hill Landfill Downgradient Location - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143134-6		680-143134-7		680-143134-8	
	Client Sample ID		SB-2017-15-22-24		SB-2017-15-32-34		SB-2017-15-37-39	
Method	Collection Date		9/14/2017	Q	9/14/2017	Q	9/14/2017	Q
Dissolved Metals	Analyte	Units						
6010C	Iron	µg/L	29,000		31,000		53,000	
6010C	Manganese	µg/L	4,800		850		1,500	
6020A	Arsenic	µg/L	550		1,300		2,100	
Miscellaneous Parameters								
9056A	Chloride	mg/L	85		12		17	
9056A	Sulfate	mg/L	8.6		3.5		2.5	
9060	DOC	mg/L	1.1		1.8		3.3	
SM 2320B	Alkalinity	mg/L	51		84		210	
Field Parameters								
	Temperature	°C	16.09		15.73		15.09	
	pH	pH	7.19		6.66		7.02	
	Specific Conductance	us/cm	340		213		415	
	ORP	mV	-42.7		-35.9		-48.6	
	Dissolved Oxygen	mg/L	0.33		0.30		0.24	
	Turbidity*	NTU	2.73		4.11		4.01	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

Turbidity* = samples collected with 10 micron in-line filter.

Table 4
SB-2017-16
Shepley's Hill Landfill Dwongradient Location - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143024-26		680-143134-10		680-143134-1		680-143134-2		680-143134-3	
	Client Sample ID		SB-2017-16-22-24		SB-2017-16-32-34		SB-2017-16-42-44		SB-2017-16-52-54		SB-2017-16-62-64	
Method	Collection Date		9/13/2017	Q	9/13/2017	Q	9/14/2017	Q	9/14/2017	Q	9/14/2017	Q
Dissolved Metals	Analyte	Units										
6010C	Iron	µg/L	17,000		3,500		32,000		41,000		5,300	
6010C	Manganese	µg/L	470		570		980		1,400		7,300	
6020A	Arsenic	µg/L	440		260		420		1,300		1.7	J
Miscellaneous Parameters												
9056A	Chloride	mg/L	240		76		4.7		15		140	
9056A	Sulfate	mg/L	10		2.5		3.4		2.8		4.0	
9060	DOC	mg/L	2.7		3.4		1.7		2.1		3.1	
SM 2320B	Alkalinity	mg/L	75		86		91		190		380	
9040C	pH**	pH	NA		7.9		7.2		7.3		7.7	
Field Parameters												
	Temperature	°C	15.40		15.22		15.46		17.30		17.63	
	pH	pH	7.09		7.60		3.41		6.70		6.94	
	Specific Conductance	us/cm	920		400		285		498		1,094	
	ORP	mV	-158.3		-118.7		26.5		-137.4		-126.8	
	Dissolved Oxygen	mg/L	0.13		0.14		0.58		1.08		1.79	
	Turbidity*	NTU	6.3		5.85		2.59		9.25		0.61	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

NA = Not analyzed

Turbidity* = samples collected with 10 micron in-line filter.

pH** = pH readings taken at the laboratory to confirm questionable field pH readings.

Table 5
SB-2017-17
Shepley's Hill Landfill Downgradient - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143024-9		680-143024-10		680-143024-11		680-143024-12		680-143024-13	
	Client Sample ID		SB-2017-17-12-14		SB-2017-17-22-24		SB-2017-17-32-34		SB-2017-17-42-44		SB-2017-17-52-54	
Method	Collection Date		9/12/2017	Q								
Dissolved Metals	Analyte	Units										
6010C	Iron	µg/L	4,800		1,600		2,600		3,900		10,000	
6010C	Manganese	µg/L	1,600		420		660		710		860	
6020A	Arsenic	µg/L	3.0	U	3.0	U	3.0	U	10		57	
Miscellaneous Parameters												
9056A	Chloride	mg/L	13		7.8		420		490		970	
9056A	Sulfate	mg/L	8.2		10		5.6		12		15	
9060	DOC	mg/L	2.6		0.46	J	0.71	J	0.91	J	1.3	
SM 2320B	Alkalinity	mg/L	23		35		29		37		54	
Field Parameters												
	Temperature	°C	12.79		14.18		17.58		12.82		13.49	
	pH	pH	4.8		6.26		6.52		6.32		7.09	
	Specific Conductance	us/cm	121		130		1,467		1,700		3,074	
	ORP	mV	173.6		144.2		130.6		158.6		99.9	
	Dissolved Oxygen	mg/L	0.43		0.35		0.34		0.75		3.11	
	Turbidity*	NTU	2.86		1.31		2.13		1.48		1.68	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

NA = Not analyzed

Turbidity* = samples collected with 10 micron in-line filter.

Table 5
SB-2017-17
Shepley's Hill Landfill Downgradient - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143024-21		680-143024-22		680-143024-24	
	Client Sample ID		SB-2017-17-62-64		SB-2017-17-72-74		SB-2017-17-78-80	
Method	Collection Date		9/13/2017	Q	9/13/2017	Q	9/13/2017	Q
Dissolved Metals	Analyte	Units						
6010C	Iron	µg/L	34,000		80,000		36,000	
6010C	Manganese	µg/L	1,500		3,100		5,100	
6020A	Arsenic	µg/L	140		520		93	
Miscellaneous Parameters								
9056A	Chloride	mg/L	69		27		35	
9056A	Sulfate	mg/L	4.3		2.8		4.7	
9060	DOC	mg/L	1.3		2.9		3.1	
SM 2320B	Alkalinity	mg/L	92		190		310	
Field Parameters								
	Temperature	°C	11.30		12.68		13.03	
	pH	pH	5.99		6.67		6.98	
	Specific Conductance	us/cm	412		602		795	
	ORP	mV	-56.8		-87.9		-114.3	
	Dissolved Oxygen	mg/L	0.83		0.8		1.02	
	Turbidity*	NTU	2.6		3.6		4.3	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

NA = Not analyzed

Turbidity* = samples collected with 10 micron in-line filter.

Table 6
SB-2017-18
Shepley's Hill Landfill Downgradient Location - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143024-15		680-143024-16		680-143024-17		680-143024-19		680-143024-18	
	Client Sample ID		SB-2017-18-12-14		SB-2017-18-22-24		SB-2017-18-32-34		FD-08		SB-2017-18-42-44	
Method	Collection Date		9/12/2017	Q	9/12/2017	Q	9/12/2017	Q	9/12/2017	Q	9/12/2017	Q
Dissolved Metals	Analyte	Units										
6010C	Iron	µg/L	630		570		1,500		1,100		930	
6010C	Manganese	µg/L	2,800		1,900		1,100		1,100		690	
6020A	Arsenic	µg/L	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
Miscellaneous Parameters												
9056A	Chloride	mg/L	20		18		4.6		4.4		3.8	
9056A	Sulfate	mg/L	9.3		9.0		11		11		6.7	
9060	DOC	mg/L	1.3		1.1		1.4	J	0.68	J	0.94	J
SM 2320B	Alkalinity	mg/L	15	U	12	U	27		26		46	
Field Parameters												
	Temperature	°C	16.43		10.58		11.27		--		11.74	
	pH	pH	6.04		6.42		5.98		--		6.31	
	Specific Conductance	us/cm	133		102		88		--		120	
	ORP	mV	37.6		39.4		15.3		--		-2.9	
	Dissolved Oxygen	mg/L	0.83		0.61		0.61		--		0.61	
	Turbidity*	NTU	3.17		2.52		1.97		--		2.15	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

NA = Not analyzed

Turbidity* = samples collected with 10 micron in-line filter.

Table 6
SB-2017-18
Shepley's Hill Landfill Downgradient Location - Drilling 2017
Validated Analytical Results

	Lab Sample ID		680-143024-20		680-143024-23		680-143024-25		680-143134-4		680-143134-5	
	Client Sample ID		SB-2017-18-52-54		SB-2017-18-62-64		SB-2017-18-72-74		SB-2017-18-82-84		SB-2017-18-91-93	
Method	Collection Date		9/13/2017	Q								
Dissolved Metals	Analyte	Units										
6010C	Iron	µg/L	5,500		45,000		44,000		41,000		15,000	
6010C	Manganese	µg/L	1,200		1,400		1,600		7,600		4,100	
6020A	Arsenic	µg/L	1.8	J	200		250		94		1.7	J
Miscellaneous Parameters												
9056A	Chloride	mg/L	4.1		21		17		22		40	
9056A	Sulfate	mg/L	6.9		2.8		4.3		2.4		7.5	
9060	DOC	mg/L	1.5		1.6		2.2		3.0		3.5	
SM 2320B	Alkalinity	mg/L	58		140		200		290		420	
Field Parameters												
	Temperature	°C	12.60		16.71		13.08		14.58		16.8	
	pH	pH	6.57		7.52		6.08		7.00		7.38	
	Specific Conductance	us/cm	105		328		449		505		686	
	ORP	mV	166.3		-46.1		343.7		29.8		-72.4	
	Dissolved Oxygen	mg/L	0.61		0.68		0.35		0.29		0.30	
	Turbidity*	NTU	1.14		4.29		2.2		2.7		4.97	

Notes:

µg/L = microgram per liter

mg/L = milligram per liter

U = non-detect

J = Estimated result

NA = Not analyzed

Turbidity* = samples collected with 10 micron in-line filter.

ATTACHMENT 1
Field Forms



Field Instrument Calibration Log

Date: 9-12-17

Weather:

Sunny 50° ^{Affernoon} Sunny 85°Project/Site Name: Dewens/Shepley

Instrument:

YSI 556Calibrated By: Karl Halberg

Serial Number:

14K 101575

Parameters	Solution Expiration Date	Morning Calibration Time	Cal. Temperature °C	Afternoon Calibration Time	Cal. Temperature °C
Specific Conductivity (1.413 µS/cm ^c)	3-18	0700	12.26	1413	14.08
pH (7)	2-19	7.03	13.15	6.89	13.49
pH (4)	2-19	3.96	12.96	3.87	13.52
pH (10)	10-18	10.12	13.02	10.13	13.43
ORP (240 mv)	1-22	242	13.32	240	13.32
Dissolved Oxygen (%)	—	98.6	10.49	98.9	12.35
Dissolved Oxygen (mg/L)	—	10.24	10.49	9.83	12.35
Barometric Pressure (mmHg)	—	760	10.49	760	12.35
Notes:					

Signature: Karl HalbergDate: 9-12-17



Field Instrument Calibration Log

Date: 9-13-17

Weather:

Sunny, 80°sProject/Site Name: Dewens / ShepleyInstrument: YSI 556Calibrated By: Kerk HalbergSerial Number: 14K 101575

Parameters	Solution Expiration Date	Morning Calibration Time <u>0700</u>	Cal. Temperature °C	Afternoon Calibration Time <u>1600</u>	Cal. Temperature °C
Specific Conductivity (1.413 µS/cm [°])	3-18	1409	13.94	1412	15.32
pH (7)	2-19	7.01	14.48	7.03	15.83
pH (4)	2-19	4.02	14.77	3.98	15.81
pH (10)	10-18	10.02	17.77	9.97	15.78
ORP (240 mv)	1-22	240.3	14.89	240.0	15.53
Dissolved Oxygen (%)	—	97.5	11.57	98.3	14.23
Dissolved Oxygen (mg/L)	—	10.46	11.57	9.37	14.23
Barometric Pressure (mmHg)	—	760	11.57	760	14.23
Notes:					

Signature: Kerk HalbergDate: 9-13-17



Turbidity Instrument Calibration Log

Project/Site Name: Dewens/Shepley
Calibrated By: Karl Halberg

Instrument: Hach 2100Q
Serial Number: 16030C048667

Date	Pre-Cal 0 NTU AM	Pre-Cal 0 NTU AM	Post-Cal 10 NTU AM	Post-Cal 10 NTU AM	Pre-Cal 0 NTU PM	Pre-Cal 0 NTU PM	Post-Cal 10 NTU PM	Post-Cal 10 NTU PM
9-11-17	9.38	21.2	10.10	20.3	98.0	790	97.5	798
9-12-17	9.52	20.3	10.33	19.8	96.3	785	98.2	780
9-13-17	9.82	19.3	10.13	21.2	978	793	99.2	795

Signature: Karl Halberg

Date: 9-11-17

Karl Halberg

9-12-17

Karl Halberg

9-13-17



Field Instrument Calibration Log

Date: 9/14/17

Weather:

AM / PM

Overcast, humid 65°F / 82°F

Project/Site Name: SHL/ Devens

Instrument:

YSI 556 MPSCalibrated By: L. Klosterman

Serial Number:

14K101#575 Piret#028182

Parameters	Solution Expiration Date	Morning Calibration Time <u>0800</u>	Cal. Temperature °C	Afternoon Calibration Time <u>1430</u>	Cal. Temperature °C
Specific Conductivity (1.413 µS/cm [°])	<u>3/18</u>		<u>1.413</u>	<u>19.83</u>	<u>1.413</u> <u>26.58</u>
pH (7)	<u>2/19</u>		<u>6.99</u>	<u>19.86</u>	<u>7.00</u> <u>27.67</u>
pH (4)	<u>2/19</u>		<u>4.00</u>	<u>19.32</u>	<u>3.99</u> <u>26.20</u>
pH (10)	<u>10/18</u>		<u>10.00</u>	<u>19.18</u>	<u>10.03</u> <u>25.88</u>
ORP (240 mv)	<u>1/31/22</u>		<u>241.0</u>	<u>19.98</u>	<u>240.1</u> <u>26.88</u>
Dissolved Oxygen (%)	—		<u>100.1</u>	<u>20.71</u>	<u>99.5</u> <u>26.35</u>
Dissolved Oxygen (mg/L)	—		—	—	—
Barometric Pressure (mmHg)	—		<u>760</u>	<u>20.57</u>	<u>760</u> <u>25.21</u>

Notes:

Signature: Lynn KlostermanDate: 9/14/17



Turbidity Instrument Calibration Log

Project/Site Name: Shepley's Hill Landfill
Calibrated By: L. Klosterman

Instrument: HACH 2100Q
Serial Number: 16030C048667

Date	Pre-Cal 10 NTU AM	Pre-Cal 20 NTU AM	Post-Cal 10 NTU AM PM	Post-Cal 20 NTU AM PM	Pre-Cal 100 NTU PM AM	Pre-Cal 800 NTU PM AM	Post-Cal 100 NTU PM	Post-Cal 800 NTU PM
8/28/17	10.0	20.0	9.67	20.5	100.0	801.0	104.0	809.0
9/14/17	—	20.1	—	19.6	100.1	102.0	801.0	814.0

Signature: Lynn Klosterman

Date: 9/14/17



Field Instrument Calibration Log

Date: 9/13/17

Weather: 70's

Project/Site Name: Peters SHL

Instrument: YSI 556 MPS

Calibrated By: MJA

Serial Number: 15C103559

Parameters	Solution Expiration Date	Morning Calibration Time	Cal. Temperature °C	Afternoon Calibration Time	Cal. Temperature °C
Specific Conductivity (1.413 µS/cm ^o)	3/18	1.417	1.413	1.4116	1.413
pH (7)	2/19	7.13	7.00	7.02	7.00
pH (4)	6/18	4.07	4.00	4.01	4.00
pH (10)	10/18	10.12	10.00	10.00	10.00
ORP (240 mv)	1/22	242.6	240.0	239.6	240.0
Dissolved Oxygen (%)	-	103.7%	100.0%	96.2%	100.0%
Dissolved Oxygen (mg/L)	-				
Barometric Pressure (mmHg)	-				

Notes:

Signature: R

Date: 9/13/17



Field Instrument Calibration Log

Date: 9/14/17

Weather:

70°

Project/Site Name: Dams SHL

Instrument:

YSI 556 MPS

Calibrated By: VAT

Serial Number:

15C103 559

Parameters	Solution Expiration Date	Morning Calibration Time	Cal. Temperature °C	Afternoon Calibration Time	Cal. Temperature °C
Specific Conductivity (1.413 µS/cm ^o)	<u>3/18</u>	<u>1.419</u>	<u>1.413</u>	<u>1.409</u>	<u>1.413</u>
pH (7)	<u>2/19</u>	<u>6.86</u>	<u>7.00</u>	<u>6.97</u>	<u>7.00</u>
pH (4)	<u>10/18</u>	<u>3.94</u>	<u>4.00</u>	<u>3.89</u>	<u>4.00</u>
pH (10)	<u>10/18</u>	<u>9.79</u>	<u>10.00</u>	<u>9.93</u>	<u>10.00</u>
ORP (240 mv)	<u>1/22</u>	<u>243.6</u>	<u>249.0</u>	<u>237.6</u>	<u>240.0</u>
Dissolved Oxygen (%)	<u>-</u>	<u>112.6%</u>	<u>100.0%</u>	<u>97.1%</u>	<u>100.0%</u>
Dissolved Oxygen (mg/L)	<u>-</u>				
Barometric Pressure (mmHg)	<u>-</u>				

Notes:

Signature: R

Date: 9/14/17



Field Instrument Calibration Log

Date: 9/15/17Weather: 80°Project/Site Name: Dover SHLInstrument: YSI 556 MPSCalibrated By: KMSerial Number: 15C103559

Parameters	Solution Expiration Date	Morning Calibration Time	Cal. Temperature °C	Afternoon Calibration Time	Cal. Temperature °C
Specific Conductivity (1.413 µS/cm ^o)	3/18	1.439	1.413	1.410	1.413
pH (7)	2/19	7.27	7.00	6.92	7.00
pH (4)	10/18	3.99	4.00	3.90	4.00
pH (10)	10/18	10.15	10.00	9.87	10.00
ORP (240 mv)	1/22	229.6	240.0	231.6	249.0
Dissolved Oxygen (%)	-	94.2%	100.0%	97.8%	100.0%
Dissolved Oxygen (mg/L)					
Barometric Pressure (mmHg)					

Notes:

Signature: [Signature]Date: 9/15/17



Turbidity Instrument Calibration Log

Project/Site Name: Shepley's Hill Landfill
Calibrated By: L. Klosterman

Instrument: HACH 2100Q
Serial Number: 16030C048667

Date	Pre-Cal 10 NTU AM	Pre-Cal 20 NTU AM	Post-Cal 10 NTU AM PM	Post-Cal 20 NTU AM PM	Pre-Cal 100 NTU PM AM	Pre-Cal 800 NTU PM AM	Post-Cal 100 NTU PM	Post-Cal 800 NTU PM
8/28/17	10.0	20.0	9.67	20.5	100.0	801.0	104.0	809.0
9/14/17	—	20.1	—	19.6	100.1	102.0	801.0	814.0

Signature: Lynn Klosterman

Date: 9/14/17

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-14-22-24

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/14/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.3'
Concrete Pad intact			x	Depth to water (ft-bTOC)	20.61'
PVC casing intact			x	Depth to bottom (ft bgs)	24'
Well gripper present			x	Screen Interval (ft-bgs)	22-24'
Bolts present			x	Total volume purged (gal)	1.50
Locked (stickup wells)			x	2 Well volumes purged (gal)	0.08 prior to LF purging

Sampling Type	Purge start/stop time	Purging Method	Tubing type	Dedicated pump (Y/N)
1423/1453	1423/1453	Peristaltic Pump	HDPE	N
		Tubing diameter	0.25 inch	Air source
				N/A
				Field Instrument (Model/S/N)
				YSI 556MPS
				Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details		
Field Filtered (Y/N): Y	Duplicate (Y/N): N	MS/MSD (Y/N): N
Filter Size (micron): <u>10+5+1+.45</u>	Dup ID/Time: <u>NA</u>	

Comments: 4 Filters used. Collected sample @1500

Kevin G. Anderson
Signature

9/14/2017
Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-14-32-34

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/14/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A		
Casing Secure			x	Diameter/Material	0.625"/PVC
Concrete Pad intact			x	Stickup (ft-bgs)	2.3'
PVC casing intact			x	Depth to water (ft-bTOC)	20.28'
Well gripper present			x	Depth to bottom (ft bgs)	34'
Bolts present			x	Screen Interval (ft-bgs)	32-34'
Locked (stickup wells)			x	Total volume purged (gal)	2.00
				2 Well volumes purged (gal)	0.28
				prior to LF purging	

Sampling Type	Purging Method <u>Peristaltic Pump</u>	Tubing type <u>HDPE</u>	Dedicated pump (Y/N) <u>N</u>
Purge start/stop time	<u>1545/1615</u>	Tubing diameter <u>0.25 inch</u>	Air source <u>N/A</u>
Field Instrument (Model/S/N)			<u>YSI 556MPS</u>
			<u>Hach2100Q</u>

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
 0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details		
Field Filtered (Y/N): Y	Duplicate (Y/N): N	MS/MSD (Y/N): N
Filter Size (micron): <u>10+5+1+.45</u>	Dup ID/Time: <u>NA</u>	

Comments: 4 Filters used. Collected sample @1620

Refusal @34'

Kevin G. Anderson

Signature

9/14/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-15-22-24

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
 Event: Drilling Profile Samples
 Location: Fort Devens Massachusetts

Date: 9/14/2017
 Sampler: KGA

Well Integrity			Well Information							
Casing Secure	Yes	No	N/A	Diameter/Material	0.625"/PVC					
Concrete Pad intact			x	Stickup (ft-bgs)	2.3'					
PVC casing intact			x	Depth to water (ft-bTOC)	17.07'					
Well gripper present			x	Depth to bottom (ft bgs)	17.01'					
Bolts present			x	Screen Interval (ft-bgs)	22-24'					
Locked (stickup wells)			x	Total volume purged (gal)	2.00					
				2 Well volumes purged (gal)	0.14 prior to LF purging					
Sampling Type										
Purge start/stop time	940/1015	Purging Method	Peristaltic Pump	Tubing type	HDPE	Dedicated pump (Y/N)	N			
						Air source	NA			
						Field Instrument (Model/S/N)	YSI 556MPS			
							Hach2100Q			
LF Stabilization Parameters										
Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^3$)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color/Clarity	
940	200	NA	17.49	8.21	351	2.62	25.2	15.00	Clear	
945	200	NA	15.97	7.31	364	2.59	27.1	5.21	Clear	
950	200	NA	15.66	7.16	338	2.38	-18.3	4.55	Clear	
955	200	NA	15.53	7.07	337	0.87	-29.7	3.49	Clear	
1000	200	NA	15.71	7.16	337	0.59	-32.1	2.96	Clear	
1005	200	NA	16.15	7.21	341	0.42	-36.4	2.89	Clear	
1010	200	NA	16.15	7.20	342	0.38	-41.6	2.76	Clear	
1015	200	NA	16.09	7.19	340	0.33	-42.7	2.73	Clear	
Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%										
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot										
Sampling Details										
Field Filtered (Y/N): Y	Duplicate (Y/N): N				MS/MSD (Y/N): N					
Filter Size (micron): 10+5+1+.45	Dup ID/Time: NA									

Comments: 4 Filters used. Collected sample @1020

Kevin G. Anderson
 Signature

9/14/2017
 Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-15-32-34

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/14/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.3'
Concrete Pad intact			x	Depth to water (ft-bTOC)	18.77'
PVC casing intact			x	Depth to bottom (ft bgs)	34'
Well gripper present			x	Screen Interval (ft-bgs)	32-34'
Bolts present			x	Total volume purged (gal)	2.00
Locked (stickup wells)			x	2 Well volumes purged (gal)	0.32 prior to LF purging

Sampling Type Purging Method Peristaltic Pump Tubing type HDPE Dedicated pump (Y/N) N
Purge start/stop time 1102/1132 Tubing diameter 0.25 inch Air source N/A
Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): N _____ MS/MSD (Y/N): N _____
Filter Size (micron): 10+5+.45 Dup ID/Time: NA _____

Comments: 3 Filters used. Collected sample @1135

Kevin G. Anderson
Signature

9/14/2017

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-15-37-39

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/14/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.3'
Concrete Pad intact			x	Depth to water (ft-bTOC)	17.72'
PVC casing intact			x	Depth to bottom (ft bgs)	39'
Well gripper present			x	Screen Interval (ft-bgs)	37-39'
Bolts present			x	Total volume purged (gal)	2.00
Locked (stickup wells)			x	2 Well volumes purged (gal)	0.44 prior to LF purging

Sampling Type	Purge start/stop time	Purge start/stop time	Purge start/stop time	Purge start/stop time
Purging Method	Peristaltic Pump	Tubing type	HDPE	Dedicated pump (Y/N)
Purge start/stop time	1222/1252	Tubing diameter	0.25 inch	Air source
				N/A
				Field Instrument (Model/S/N)
				YSI 556MPS
				Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): N MS/MSD (Y/N): N
Filter Size (micron): 10+5+.45 Dup ID/Time: NA

Comments: 3 Filters used. Collected sample @1255 Refusal @39'

Kevin G. Anderson
Signature

9/14/2017
Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-16-22-24

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: K. Halberg
Location: Fort Devens Massachusetts

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.4
Depth to water (ft-bTOC)	15.35
Depth to bottom (ft bgs)	24
Screen Interval (ft-bgs)	22-24
Total volume purged (gal)	3.5
2 Well volumes purged (gal)	0.5

Sampling Type

Purge start/stop time 1350/1425 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft $\pm 3\%$ ± 0.1 $\pm 3\%$ $\pm 10\%$ $\pm 10\text{mv}$ 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10±0.45

Dup ID/Time: NA

Comments: Two filters were used. Collected sample at 1430. Post DTW = 15.38 ft bTOC. Tubing intake at mid screen, (23 ft). Borehole collapsed to 4 ft.

Kerk Halberg

Signature

9/13/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-16-32-34

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: K. Halberg
Location: Fort Devens Massachusetts

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.4
Depth to water (ft-bTOC)	16.32
Depth to bottom (ft bgs)	34
Screen Interval (ft-bgs)	32-34
Total volume purged (gal)	3.5
2 Well volumes purged (gal)	0.7

Sampling Type

Purge start/stop time 1500/1540 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+5+1+0.45

Dup ID/Time: NA

Comments: 4 filters were used. Collected sample at 1540. Post DTW = 16.47 ft bTOC.

Borehole collapsed to 4 ft.

Kerk Halberg

Signature

9/13/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-16-42-44

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/14/2017
Sampler: L. Klosterman

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.8'
Depth to water (ft-bTOC)	16.33'
Depth to bottom (ft bgs)	44'
Screen Interval (ft-bgs)	42-44'
Total volume purged (gal)	2.8
2 Well volumes purged (gal)	1.1 prior to LF purging

Sampling Type

Purge start/stop time 0857-0927 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+0.45

Dup ID/Time: NA

Comments: Two filters were used. Collected sample at 0927. Post DTW = 16.35 ft bTOC. Due to low pH, submitted to Lab for analysis.

Lynne Klosterman

9/12/2017

Signature

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-16-52-54

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/14/2017
Sampler: L. Klosterman

Well Integrity

	Yes	No	N/A
Casing Secure		X	
Concrete Pad intact		X	
PVC casing intact		X	
Well gripper present		X	
Bolts present		X	
Locked (stickup wells)		X	

Well Information

Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.8'
Depth to water (ft-bTOC)	19.72'
Depth to bottom (ft bgs)	54'
Screen Interval (ft-bgs)	52-54'
Total volume purged (gal)	2.5
2 Well volumes purged (gal)	1.1 prior to LF purging

Sampling Type

Purging Method Peristaltic Pump Tubing type HDPE
Purge start/stop time 1020/1105 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^3$)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color/Clarity
1020	200	NA	16.52	3.13	485	21.6	77.8	5.34	Clear
1025	200	NA	16.34	2.73	488	1.86	90.9	3.65	Clear
1030	200	NA	16.34	6.64	488	0.77	-124.3	3.98	Clear
1035	200	NA	16.27	2.92	490	0.64	76.4	4.37	Clear
1040	200	NA	16.11	2.71	491	0.60	79.0	6.47	Clear
1045	200	NA	17.07	4.06	--	7.07	18.8	6.11	Clear
1050	200	NA	16.78	6.69	496	2.03	-132.7	8.59	Clear
1055	200	NA	16.72	6.67	495	1.18	-132.8	9.01	Clear
1100	200	NA	16.89	6.69	495	1.09	-134.5	9.08	Clear
1105	200	NA	17.30	6.70	498	1.08	-137.4	9.25	Clear

Acceptance Criteria: <0.3ft $\pm 3\%$ ± 0.1 $\pm 3\%$ $\pm 10\%$ $\pm 10\text{mv}$ 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+5+0.45

Dup ID/Time: NA

Comments: Three filters were used. Collected sample at 1105. Post DTW = 16.53 ft bTOC. Some pH readings were low due to YSI faulty wiring. pH stabilized in last 4 readings.

Lynne Klosterman

Signature

9/14/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-16-62-64

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/14/2017
Sampler: L. Klosterman

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.8'
Depth to water (ft-bTOC)	17.03'
Depth to bottom (ft bgs)	64'
Screen Interval (ft-bgs)	62-64'
Total volume purged (gal)	3.0
2 Well volumes purged (gal)	1.5
	prior to LF purging

Sampling Type

Purge start/stop time 1225/1300 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+10+5+5+1+1+0.45

Dup ID/Time: NA

Comments: Seven filters were used. Collected sample at 1300. Post DTW = 18.19 ft bTOC. Tubing intake = 62 ft bgs.

Lynne Klosterman

Signature

9/14/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-17-12-14

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/12/2017
Sampler: L. Klosterman

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.7'
Depth to water (ft-bTOC)	8.87'
Depth to bottom (ft bgs)	14'
Screen Interval (ft-bgs)	12-14'
Total volume purged (gal)	3.0
2 Well volumes purged (gal)	0.20 prior to LF purging

Sampling Type

Purge start/stop time 0853/0935 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft $\pm 3\%$ ± 0.1 $\pm 3\%$ $\pm 10\%$ $\pm 10\text{mv}$ 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+0.45

Dup ID/Time: NA

Comments: Two filters were used. Collected sample at 0935. Post DTW = 5.02 ft bTOC. Tubing intake at 14 ft bgs.

Lynne Klosterman
Signature

9/12/2017
Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-17-22-24

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/12/2017
Sampler: L. Klosterman

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.01'
Depth to water (ft-bTOC)	6.42'
Depth to bottom (ft bgs)	24'
Screen Interval (ft-bgs)	22-24'
Total volume purged (gal)	3.0
2 Well volumes purged (gal)	0.6 prior to LF purging

Sampling Type

Purging Method Peristaltic Pump Tubing type HDPE
Purge start/stop time 1025/1100 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+10+0.45

Dup ID/Time: NA

Comments: Three filters were used. Collected sample at 1100. Post DTW = 5.25 ft bTOC.

Lynne Klosterman

Signature

9/12/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-17-32-34

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/12/2017
Sampler: L. Klosterman

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.05'
Depth to water (ft-bTOC)	5.18'
Depth to bottom (ft bgs)	34'
Screen Interval (ft-bgs)	32-34'
Total volume purged (gal)	3.0
2 Well volumes purged (gal)	1.0 prior to LF purging

Sampling Type
Purging Method Peristaltic Pump Tubing type HDPE
Purge start/stop time 1155/1240 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N
Air source NA
Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^2$)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color/Clarity
1155	300	NA	13.17	5.47	1415	2.66	213.9	1.88	Clear
1200	300	NA	12.54	4.11	1435	0.44	227.1	3.17	Clear
1205	300	NA	12.56	5.35	1437	0.36	200.5	2.41	Clear
1210	300	NA	12.64	5.31	1433	0.32	200.1	0.91	Clear
1215	300	NA	13.19	5.69	1439	0.37	182.1	1.72	Clear
1220	300	NA	14.28	5.88	1446	0.50	175.2	1.53	Clear
1225	300	NA	15.48	6.29	1455	0.34	154.6	1.38	Clear
1230	300	NA	16.69	6.42	1461	0.30	133.1	1.11	Clear
1235	300	NA	17.31	6.51	1462	0.33	130.1	2.41	Clear
1240	300	NA	17.58	6.52	1467	0.34	130.6	2.13	Clear

Acceptance Criteria: <0.3ft $\pm 3\%$ ± 0.1 $\pm 3\%$ $\pm 10\%$ $\pm 10\text{mv}$ 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): N MS/MSD (Y/N): N
Filter Size (micron): 10+10+0.45 Dup ID/Time: NA

Comments: Three filters were used. Collected sample at 1240. Post DTW = 5.45 ft bTOC. Tubing intake = 32 ft bgs.

Lynne Klosterman
Signature

9/12/2017
Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-17-42-44

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/12/2017
Sampler: L. Klosterman

Well Integrity

	Yes	No	N/A
Casing Secure			X
Concrete Pad intact			X
PVC casing intact			X
Well gripper present			X
Bolts present			X
Locked (stickup wells)			X

Well Information

Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.4'
Depth to water (ft-bTOC)	3.05'
Depth to bottom (ft bgs)	44'
Screen Interval (ft-bgs)	42-44'
Total volume purged (gal)	5.0
2 Well volumes purged (gal)	1.3 prior to LF purging

Sampling Type

Purging Method Peristaltic Pump Tubing type HDPE
Purge start/stop time 1340/1430 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^3$)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color/Clarity
1340	300	NA	14.82	6.51	1739	3.88	212.0	3.77	Clear
1345	300	NA	13.03	5.91	1735	0.63	211.4	3.16	Clear
1350	300	NA	12.98	5.99	1724	0.43	199.7	1.11	Clear
1355	300	NA	13.53	6.17	1724	0.44	187.9	0.98	Clear
1400	300	NA	14.73	6.46	1739	0.34	172.6	0.99	Clear
1405	300	NA	16.26	6.75	1750	0.98	158.0	88.0	Clear
1410	320	NA	13.27	6.47	1731	2.18	159.5	13.5	Clear
1415	320	NA	12.86	6.43	1729	1.84	160.3	8.56	Clear
1420	320	NA	12.74	6.36	1716	1.13	160.7	3.24	Clear
1425	320	NA	12.68	6.29	1703	0.68	159.9	2.11	Clear
1430	320	NA	12.82	6.32	1700	0.75	158.6	1.48	Clear

Acceptance Criteria: <0.3ft $\pm 3\%$ ± 0.1 $\pm 3\%$ $\pm 10\%$ $\pm 10\text{mv}$ 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+10+10+5+0.45

Dup ID/Time: NA

Comments: Five filters were used. Collected sample at 1430. Post DTW = 9.10 ft bTOC.

After adding an extra filter after turbidity spiked to 88 at 1405, DO did not stabilize within 10%.

Lynne Klosterman

Signature

9/12/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC

Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-17-52-54

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/12/2017
Event: Drilling Profile Samples Sampler: L. Klosterman
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			X	Stickup (ft-bgs)	2.0'
Concrete Pad intact			X	Depth to water (ft-bTOC)	6.02'
PVC casing intact			X	Depth to bottom (ft bgs)	54'
Well gripper present			X	Screen Interval (ft-bgs)	52-54'
Bolts present			X	Total volume purged (gal)	3.0
Locked (stickup wells)			X	2 Well volumes purged (gal)	1.5 prior to LF purging

Sampling Type	Purging Method	Peristaltic Pump	Tubing type	HDPE	Dedicated pump (Y/N)	N
Purge start/stop time	1520/1600	Tubing diameter	0.25 inch	Air source	NA	
Field Instrument (Model/S/N)	YSI 556MPS	Hach2100Q				

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
 0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): N MS/MSD (Y/N): N
Filter Size (micron): 10+5+0.45 Dup ID/Time: NA

Comments: Three filters were used. Collected sample at 1600. Post DTW = 9.10 ft bTOC. Tubing intake = 52 ft bgs.

Lynne Klosterman
Signature

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-17-62-64

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/13/2017
Sampler: K. Halberg

Well Integrity

	Yes	No	N/A
Casing Secure			X
Concrete Pad intact			X
PVC casing intact			X
Well gripper present			X
Bolts present			X
Locked (stickup wells)			X

Well Information

Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.4
Depth to water (ft-bTOC)	10.13
Depth to bottom (ft bgs)	64
Screen Interval (ft-bgs)	62-64
Total volume purged (gal)	4.0
2 Well volumes purged (gal)	2.0

Sampling Type

Purging Method Peristaltic Pump Tubing type HDPE
Purge start/stop time 0845/0925 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^{\circ}$)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Color/Clarity
0845	150	NA	11.52	5.90	463	5.31	-72.6	26.90	Clear
0850	150	NA	11.21	5.92	415	2.64	-53.8	2.63	Clear
0855	150	NA	11.13	5.94	405	1.36	-53.7	2.36	Clear
0900	150	NA	11.07	5.93	402	0.78	-53.5	2.47	Clear
0905	150	NA	11.23	5.95	410	0.80	-55.4	2.32	Clear
0910	150	NA	11.20	6.02	410	0.79	-56.3	2.40	Clear
0915	150	NA	11.18	5.98	412	0.82	-55.8	2.63	Clear
0920	150	NA	11.23	6.01	411	0.81	-57.3	2.58	Clear
0925	150	NA	11.30	5.99	412	0.83	-56.8	2.60	Clear

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): Y 0935/0940

Filter Size (micron): 10+5+1+0.45

Dup ID/Time: NA

Comments: Four filters were used. Collected sample at 0930. Post DTW = 11.2 ft bTOC.

Kerk Halberg

Signature

9/13/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-17-72-74

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: K. Halberg
Location: Fort Devens Massachusetts

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information	
Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.4
Depth to water (ft-bTOC)	11.13
Depth to bottom (ft bgs)	74
Screen Interval (ft-bgs)	72-74
Total volume purged (gal)	4.5
2 Well volumes purged (gal)	2.0

Sampling Type

Purge start/stop time 1015/1050 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10±5±0.45

Dup ID/Time: NA

Comments: Three filters were used. Collected sample at 1100. Post DTW = 11.38 ft bTOC.

Kerk Halberg

Signature

9/13/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-17-78-80

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: K. Halberg
Location: Fort Devens Massachusetts

Well Integrity		
	Yes	No
Casing Secure		X
Concrete Pad intact		X
PVC casing intact		X
Well gripper present		X
Bolts present		X
Locked (stickup wells)		X

Well Information
Diameter/Material
Stickup (ft-bgs)
Depth to water (ft-bTOC)
Depth to bottom (ft bgs)
Screen Interval (ft-bgs)
Total volume purged (gal)
2 Well volumes purged (gal)

Sampling Type

Purge start/stop time 1140/1215 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source NA

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
 0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+5+1+0.45

Dup ID/Time: NA

Comments: 4 filters were used. Collected sample at 1220. Post DTW = 12.54 ft bTOC.

Kerk Halberg
Signature

9/13/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

The logo for KGS (Kingsway Girls' School) features a stylized paintbrush with a pink handle and a black ferrule, positioned above the letters "KGS" which are written in a pink, cursive, handwritten-style font.

Well Identification: SB-2017-18-12-14

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill Date: 9/12/2017
Event: Drilling Profile Samples Sampler: KH
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.4
Concrete Pad intact			x	Depth to water (ft-bTOC)	6.32
PVC casing intact			x	Depth to bottom (ft bgs)	14
Well gripper present			x	Screen Interval (ft-bgs)	14-Dec
Bolts present			x	Total volume purged (gal)	2.5
Locked (stickup wells)			x	2 Well volumes purged (gal)	0.3

Sampling Type		
Purging Method	Peristaltic Pump	Tubing type
Purge start/stop time	1215/1245	Tubing diameter
	0.25 inch	Dedicated pump (Y/N)
		N
		Air source
		N/A
		Field Instrument (Model/S/N)
		YSI 556MPS
		Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details		
Field Filtered (Y/N): Y	Duplicate (Y/N): N	MS/MSD (Y/N): N
Filter Size (micron): <u>10+5+0.45</u>	Dup ID/Time: _____	

Comments: 3 Filters used. Collected sample @1250. Post DTW = 6.40 ft bTOC.

Kerk Halberg
Signature

9/12/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-18-22-24

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/12/2017
Event: Drilling Profile Samples Sampler: KH
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.4
Concrete Pad intact			x	Depth to water (ft-bTOC)	6.87
PVC casing intact			x	Depth to bottom (ft bgs)	24
Well gripper present			x	Screen Interval (ft-bgs)	22-24
Bolts present			x	Total volume purged (gal)	2.5
Locked (stickup wells)			x	2 Well volumes purged (gal)	0.6

Sampling Type Purging Method Peristaltic Pump Tubing type HDPE Dedicated pump (Y/N) N
Purge start/stop time 1315/1345 Tubing diameter 0.25 inch Air source N/A
Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): N MS/MSD (Y/N): N
Filter Size (micron): 10+5+0.45 Dup ID/Time: _____

Comments: 3 Filters used. Collected sample @1350. Post DTW = 7.32 ft bTOC.

Kerk Halberg
Signature

9/12/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-18-32-34

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/12/2017
Event: Drilling Profile Samples Sampler: KH
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.4
Concrete Pad intact			x	Depth to water (ft-bTOC)	7.32
PVC casing intact			x	Depth to bottom (ft bgs)	34
Well gripper present			x	Screen Interval (ft-bgs)	32-34
Bolts present			x	Total volume purged (gal)	5.0
Locked (stickup wells)			x	2 Well volumes purged (gal)	1.0

Sampling Type				
Purging Method	Peristaltic Pump	Tubing type	HDPE	Dedicated pump (Y/N)
Purge start/stop time	1435/1510	Tubing diameter	0.25 inch	N
				Air source
				N/A
		Field Instrument (Model/S/N)		YSI 556MPS
				Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): Y MS/MSD (Y/N): N
Filter Size (micron): 10+5+0.45 Dup ID/Time: FD-08/1525

Comments: 3 Filters used. Collected sample @1520. Post DTW = 7.48 ft bTOC.

Kerk Halberg
Signature

9/12/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-18-42-44

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
Event: Drilling Profile Samples
Location: Fort Devens Massachusetts

Date: 9/12/2017
Sampler: KH

Well Integrity

	Yes	No	N/A
Casing Secure			x
Concrete Pad intact			x
PVC casing intact			x
Well gripper present			x
Bolts present			x
Locked (stickup wells)			x

Well Information

Diameter/Material	0.625"/PVC
Stickup (ft-bgs)	2.4
Depth to water (ft-bTOC)	17.83
Depth to bottom (ft bgs)	44
Screen Interval (ft-bgs)	42-44
Total volume purged (gal)	3.5
2 Well volumes purged (gal)	2.0

Sampling Type

Purging Method Peristaltic Pump Tubing type HDPE
Purge start/stop time 1610/1650 Tubing diameter 0.25 inch

Dedicated pump (Y/N) N

Air source N/A

Field Instrument (Model/S/N) YSI 556MPS
Hach2100Q

LF Stabilization Parameters

Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^3$)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color/Clarity
1610	150	NA	12.80	6.42	119	6.08	28.0	10.10	Clear
1615	150	NA	12.14	6.20	119	1.65	23.3	2.98	Clear
1620	150	NA	10.02	6.27	119	1.03	12.7	2.73	Clear
1625	150	NA	11.78	6.30	118	0.78	7.3	2.36	Clear
1630	150	NA	11.66	6.33	118	0.60	0.8	2.12	Clear
1635	150	NA	11.69	6.31	119	0.59	-2.9	2.40	Clear
1640	150	NA	11.73	6.32	118	0.61	-3	2.32	Clear
1645	150	NA	11.72	6.33	119	0.60	-2.9	2.28	Clear
1650	150	NA	11.74	6.31	120	0.61	-2.9	2.15	Clear

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%

0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y

Duplicate (Y/N): N

MS/MSD (Y/N): N

Filter Size (micron): 10+5+5+0.45

Dup ID/Time: _____

Comments: 4 Filters used. Collected sample @1700. Post DTW = 18.12 ft bTOC.

Kerk Halberg

Signature

9/12/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-18-52-54

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.3'
Concrete Pad intact			x	Depth to water (ft-bTOC)	6.04'
PVC casing intact			x	Depth to bottom (ft bgs)	54'
Well gripper present			x	Screen Interval (ft-bgs)	52-54'
Bolts present			x	Total volume purged (gal)	3.00
Locked (stickup wells)			x	2 Well volumes purged (gal)	1.00

prior to LF purging

Sampling Type	Purge start/stop time	Purging Method	Tubing type	Dedicated pump (Y/N)	Air source
	900/930	Peristaltic Pump	HDPE	N	N/A
			0.25 inch		
				Field Instrument (Model/S/N)	YSI 556MPS Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details		
Field Filtered (Y/N): Y	Duplicate (Y/N): N	MS/MSD (Y/N): N
Filter Size (micron): <u>10+5+.45</u>	Dup ID/Time: <u>NA</u>	

Comments: 3 Filters used. Collected sample @935

Kevin G. Anderson
Signature

9/13/2017
Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-18-62-64

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
 Event: Drilling Profile Samples
 Location: Fort Devens Massachusetts

Date: 9/13/2017
 Sampler: KGA

Well Integrity			Well Information									
Casing Secure	Yes	No	N/A	Diameter/Material	0.625"/PVC							
Concrete Pad intact			x	Stickup (ft-bgs)	2.3'							
PVC casing intact			x	Depth to water (ft-bTOC)	5.13'							
Well gripper present			x	Depth to bottom (ft bgs)	64'							
Bolts present			x	Screen Interval (ft-bgs)	62-64'							
Locked (stickup wells)			x	Total volume purged (gal)	3.00							
				2 Well volumes purged (gal)	1.20 prior to LF purging							
Sampling Type												
Purge start/stop time	1035/1120			Tubing type	HDPE			Dedicated pump (Y/N)	N			
Purge start/stop time	1035/1120			Tubing diameter	0.25 inch			Air source	N/A			
										Field Instrument (Model/S/N)	YSI 556MPS	
										Hach2100Q		
LF Stabilization Parameters												
Time (hhmm)	Flow Rate (ml/min)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^3$)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Color/Clarity			
1035	200	NA	13.95	7.17	399	2.99	79.6	11.40	Clear			
1040	200	NA	13.70	6.58	385	1.63	43.4	49.70	Clear			
1045	200	NA	13.87	7.29	379	3.69	21.6	6.27	Clear			
1050	200	NA	15.99	7.35	377	3.10	-19.3	6.00	Clear			
1055	200	NA	16.41	7.47	366	2.01	-29.7	4.55	Clear			
1100	200	NA	16.63	7.51	360	1.72	-34.6	4.47	Clear			
1105	200	NA	16.79	7.50	343	1.06	-40.3	4.39	Clear			
1110	200	NA	16.68	7.51	326	0.77	-44.1	4.29	Clear			
1115	200	NA	16.69	7.52	327	0.69	-45.6	4.31	Clear			
1120	200	NA	16.71	7.52	328	0.68	-46.1	4.29	Clear			
Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%												
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot												
Sampling Details												
Field Filtered (Y/N): Y	Duplicate (Y/N): N			MS/MSD (Y/N): N								
Filter Size (micron): 10+5+1+.45	Dup ID/Time: NA											

Comments: 5 Filters used. Collected sample @1125

Kevin G. Anderson
 Signature

9/13/2017

Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-18-72-74

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A	Diameter/Material	0.625"/PVC
Casing Secure			x	Stickup (ft-bgs)	2.3'
Concrete Pad intact			x	Depth to water (ft-bTOC)	5.92'
PVC casing intact			x	Depth to bottom (ft bgs)	74'
Well gripper present			x	Screen Interval (ft-bgs)	72-74'
Bolts present			x	Total volume purged (gal)	4.00
Locked (stickup wells)			x	2 Well volumes purged (gal)	1.40

prior to LF purging

Sampling Type	Purge start/stop time	Purge start/stop time	Purge start/stop time
Purging Method	Peristaltic Pump	Tubing type	HDPE
Purge start/stop time	1232/1302	Tubing diameter	0.25 inch
Dedicated pump (Y/N)	N	Air source	N/A
Field Instrument (Model/S/N)	YSI 556MPS	Hach	2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details	
Field Filtered (Y/N): Y	Duplicate (Y/N): N _____
Filter Size (micron): <u>10+5+.45</u>	Dup ID/Time: <u>NA</u> _____

Comments: 3 Filters used. Collected sample @1310

Kevin G. Anderson
Signature

9/13/2017

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log



Well Identification: SB-2017-18-82-84

Geoprobe Sampler: SP16

Project: 1081-006 Shepley's Hill Landfill
 Event: Drilling Profile Samples
 Location: Fort Devens Massachusetts

Date: 9/13/2017
 Sampler: KGA

Well Integrity			Well Information							
Casing Secure	Yes	No	N/A	Diameter/Material	0.625"/PVC					
Concrete Pad intact			x	Stickup (ft-bgs)	2.3'					
PVC casing intact			x	Depth to water (ft-bTOC)	8.34'					
Well gripper present			x	Depth to bottom (ft bgs)	84'					
Bolts present			x	Screen Interval (ft-bgs)	82-84'					
Locked (stickup wells)			x	Total volume purged (gal)	3.00					
				2 Well volumes purged (gal)	1.50 prior to LF purging					
Sampling Type										
Purge start/stop time	1415/1450			Tubing type	HDPE			Dedicated pump (Y/N)	N	
Flow Rate (ml/min)				Tubing diameter	0.25 inch			Air source	NA	
Time (hhmm)	Depth to Water (ft)	Temp (°C)	pH (STD)	SPC ($\mu\text{S}/\text{cm}^3$)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Field Instrument (Model/S/N)		
1415	NA	15.35	7.09	499	5.00	301.3	2.89	YSI 556MPS		
1420	NA	14.19	7.04	499	2.04	125.3	2.76	Hach2100Q		
1425	NA	14.52	7.02	496	1.40	213.1	2.63			
1430	NA	14.53	7.00	496	0.62	229.7	2.59			
1435	NA	14.50	7.01	502	0.39	41.6	2.63			
1440	NA	14.47	7.01	503	0.33	31.6	2.64			
1445	NA	14.53	7.00	504	0.31	30.6	2.72			
1450	NA	14.58	7.00	505	0.29	29.8	2.70			
Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%										
0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot										
Sampling Details										
Field Filtered (Y/N): Y	Filter Size (micron): 10+5+.45			Duplicate (Y/N): N	MS/MSD (Y/N): N					
				Dup ID/Time: NA						

Comments: 3 Filters used. Collected sample @1455

Kevin G. Anderson
 Signature

9/13/2017
 Date

KOMAN GOVERNMENT SOLUTIONS LLC
Low Flow/Low Stress Groundwater Sampling Log

Well Identification: SB-2017-18-91-93

Geoprobe Sampler: SP16



Project: 1081-006 Shepley's Hill Landfill Date: 9/13/2017
Event: Drilling Profile Samples Sampler: KGA
Location: Fort Devens Massachusetts

Well Integrity			Well Information		
	Yes	No	N/A		
Casing Secure			x	Diameter/Material	0.625"/PVC
Concrete Pad intact			x	Stickup (ft-bgs)	3'
PVC casing intact			x	Depth to water (ft-bTOC)	12.08'
Well gripper present			x	Depth to bottom (ft bgs)	93'
Bolts present			x	Screen Interval (ft-bgs)	91/93'
Locked (stickup wells)			x	Total volume purged (gal)	3.50
				2 Well volumes purged (gal)	1.60 prior to LF purging

Sampling Type	Purge start/stop time	Purging Method	Tubing type	Dedicated pump (Y/N)	Air source
1625/1655	1625/1655	Peristaltic Pump	HDPE	N	N/A
			0.25 inch		
				Field Instrument (Model/S/N)	YSI 556MPS
					Hach2100Q

Acceptance Criteria: <0.3ft ±3% ±0.1 ±3% ±10% ± 10mv 10%
 0.625-inch diameter tooling volume = 0.02 gal/ft or 60 ml per foot

Sampling Details

Field Filtered (Y/N): Y Duplicate (Y/N): N MS/MSD (Y/N): N
Filter Size (micron): 10+5+1+.45 Dup ID/Time: NA

Comments: 5 Filters used. Collected sample @1700 Refusal @93'

Kevin G. Anderson
Signature

9/13/2017
Date

ATTACHMENT 2
Laboratory Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-143024-1

Client Project/Site: Devens - SHL EPA SOW Phase 1

For:

KOMAN Government Solutions, LLC

293 Boston Post Road

Suite 100

Marlborough, Massachusetts 01752

Attn: Laurie Ekes



Authorized for release by:

9/27/2017 9:50:15 AM

Jerry Lanier, Project Manager I

(912)354-7858 e.3410

jerry.lanier@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Job ID: 680-143024-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Devens - SHL EPA SOW Phase 1

Report Number: 680-143024-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 09/14/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.1° C, 0.4° C, 0.5° C, 0.5° C and 4.1° C.

METALS (ICP) - DISSOLVED

Samples SB-2017-02-82-84 (680-143024-1), SB-2017-05-82-84 (680-143024-2), SB-2017-02-92-94 (680-143024-3), SB-2017-02-102-1044 (680-143024-4), SB-2017-05-92-94 (680-143024-5), SB-2017-02-111-113 (680-143024-6), FD-07 (680-143024-7), SB-2017-05-102-104 (680-143024-8), SB-2017-17-12-14 (680-143024-9), SB-2017-17-22-24 (680-143024-10), SB-2017-17-32-34 (680-143024-11), SB-2017-17-42-44 (680-143024-12), SB-2017-17-52-54 (680-143024-13), SB-2017-05-112-114 (680-143024-14), SB-2017-18-12-14 (680-143024-15), SB-2017-18-22-24 (680-143024-16), SB-2017-18-32-34 (680-143024-17), SB-2017-18-42-44 (680-143024-18), FD-08 (680-143024-19), SB-2017-18-52-54 (680-143024-20), SB-2017-17-62-64 (680-143024-21), SB-2017-17-72-74 (680-143024-22), SB-2017-18-62-64 (680-143024-23), SB-2017-17-78-80 (680-143024-24), SB-2017-18-72-74 (680-143024-25) and SB-2017-16-22-24 (680-143024-26) were analyzed for Metals (ICP) - Dissolved in accordance with EPA SW-846 Method 6010C. The samples were prepared on 09/15/2017 and 09/18/2017 and analyzed on 09/18/2017 and 09/20/2017.

Iron failed the recovery criteria low for the MS of sample SB-2017-17-62-64MS (680-143024-21) in batch 680-495230.

Iron and Manganese failed the recovery criteria low for the MSD of sample SB-2017-17-62-64MSD (680-143024-21) in batch 680-495230.

Iron and Manganese failed the recovery criteria low for the MS/MSD of sample SB-2017-05-102-104 (680-143024-8) in batch 680-495534.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - DISSOLVED

Samples SB-2017-02-82-84 (680-143024-1), SB-2017-05-82-84 (680-143024-2), SB-2017-02-92-94 (680-143024-3), SB-2017-02-102-1044 (680-143024-4), SB-2017-05-92-94 (680-143024-5), SB-2017-02-111-113 (680-143024-6), FD-07 (680-143024-7), SB-2017-05-102-104 (680-143024-8), SB-2017-17-12-14 (680-143024-9), SB-2017-17-22-24 (680-143024-10), SB-2017-17-32-34 (680-143024-11), SB-2017-17-42-44 (680-143024-12), SB-2017-17-52-54 (680-143024-13), SB-2017-05-112-114 (680-143024-14), SB-2017-18-12-14 (680-143024-15), SB-2017-18-22-24 (680-143024-16), SB-2017-18-32-34 (680-143024-17), SB-2017-18-42-44 (680-143024-18), FD-08 (680-143024-19), SB-2017-18-52-54 (680-143024-20), SB-2017-17-62-64 (680-143024-21), SB-2017-17-72-74 (680-143024-22), SB-2017-18-62-64 (680-143024-23), SB-2017-17-78-80 (680-143024-24), SB-2017-18-72-74 (680-143024-25) and SB-2017-16-22-24 (680-143024-26) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 09/15/2017 and 09/18/2017 and analyzed on 09/19/2017.

Arsenic failed the recovery criteria high for the MS of sample SB-2017-05-102-104MS (680-143024-8) in batch 680-495330.

Refer to the QC report for details.

Case Narrative

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Job ID: 680-143024-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples SB-2017-02-82-84 (680-143024-1), SB-2017-05-82-84 (680-143024-2), SB-2017-02-92-94 (680-143024-3), SB-2017-02-102-1044 (680-143024-4), SB-2017-05-92-94 (680-143024-5), SB-2017-02-111-113 (680-143024-6), FD-07 (680-143024-7), SB-2017-05-102-104 (680-143024-8), SB-2017-17-12-14 (680-143024-9), SB-2017-17-22-24 (680-143024-10), SB-2017-17-32-34 (680-143024-11), SB-2017-17-42-44 (680-143024-12), SB-2017-17-52-54 (680-143024-13), SB-2017-05-112-114 (680-143024-14), SB-2017-18-12-14 (680-143024-15), SB-2017-18-22-24 (680-143024-16), SB-2017-18-32-34 (680-143024-17), SB-2017-18-42-44 (680-143024-18), FD-08 (680-143024-19), SB-2017-18-52-54 (680-143024-20), SB-2017-17-62-64 (680-143024-21), SB-2017-17-72-74 (680-143024-22), SB-2017-18-62-64 (680-143024-23), SB-2017-17-78-80 (680-143024-24), SB-2017-18-72-74 (680-143024-25) and SB-2017-16-22-24 (680-143024-26) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 09/15/2017, 09/19/2017 and 09/21/2017.

Alkalinity was detected in method blank MB 280-387954/30 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Alkalinity was detected in method blank MB 280-387954/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Alkalinity was detected in method blank MB 280-388215/31 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Alkalinity was detected in method blank MB 280-388592/31 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS BY ION CHROMATOGRAPHY (28 DAY)

Samples SB-2017-02-82-84 (680-143024-1), SB-2017-05-82-84 (680-143024-2), SB-2017-02-92-94 (680-143024-3), SB-2017-02-102-1044 (680-143024-4), SB-2017-05-92-94 (680-143024-5), SB-2017-02-111-113 (680-143024-6), FD-07 (680-143024-7), SB-2017-05-102-104 (680-143024-8), SB-2017-17-12-14 (680-143024-9), SB-2017-17-22-24 (680-143024-10), SB-2017-17-32-34 (680-143024-11), SB-2017-17-42-44 (680-143024-12), SB-2017-17-52-54 (680-143024-13), SB-2017-05-112-114 (680-143024-14), SB-2017-18-12-14 (680-143024-15), SB-2017-18-22-24 (680-143024-16), SB-2017-18-32-34 (680-143024-17), SB-2017-18-42-44 (680-143024-18), FD-08 (680-143024-19), SB-2017-18-52-54 (680-143024-20), SB-2017-17-62-64 (680-143024-21), SB-2017-17-72-74 (680-143024-22), SB-2017-18-62-64 (680-143024-23), SB-2017-17-78-80 (680-143024-24), SB-2017-18-72-74 (680-143024-25) and SB-2017-16-22-24 (680-143024-26) were analyzed for Anions by Ion Chromatography (28 Day) in accordance with SW 846 9056A. The samples were analyzed on 09/16/2017, 09/17/2017, 09/19/2017 and 09/20/2017.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples SB-2017-17-32-34 (680-143024-11)[10X], SB-2017-17-42-44 (680-143024-12)[25X], SB-2017-17-52-54 (680-143024-13)[25X], SB-2017-17-62-64 (680-143024-21)[2X] and SB-2017-16-22-24 (680-143024-26)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON

Samples SB-2017-02-82-84 (680-143024-1), SB-2017-05-82-84 (680-143024-2), SB-2017-02-92-94 (680-143024-3), SB-2017-02-102-1044 (680-143024-4), SB-2017-05-92-94 (680-143024-5), SB-2017-02-111-113 (680-143024-6), FD-07 (680-143024-7), SB-2017-05-102-104 (680-143024-8), SB-2017-17-12-14 (680-143024-9), SB-2017-17-22-24 (680-143024-10), SB-2017-17-32-34 (680-143024-11), SB-2017-17-42-44 (680-143024-12), SB-2017-17-52-54 (680-143024-13), SB-2017-05-112-114 (680-143024-14), SB-2017-18-12-14 (680-143024-15), SB-2017-18-22-24 (680-143024-16), SB-2017-18-32-34 (680-143024-17), SB-2017-18-42-44

Case Narrative

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Job ID: 680-143024-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

(680-143024-18), FD-08 (680-143024-19), SB-2017-18-52-54 (680-143024-20), SB-2017-17-62-64 (680-143024-21), SB-2017-17-72-74 (680-143024-22), SB-2017-18-62-64 (680-143024-23), SB-2017-17-78-80 (680-143024-24), SB-2017-18-72-74 (680-143024-25) and SB-2017-16-22-24 (680-143024-26) were analyzed for dissolved organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 09/19/2017 and 09/20/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-143024-1	SB-2017-02-82-84	Water	09/11/17 09:40	09/14/17 09:35
680-143024-2	SB-2017-05-82-84	Water	09/11/17 10:25	09/14/17 09:35
680-143024-3	SB-2017-02-92-94	Water	09/11/17 11:35	09/14/17 09:35
680-143024-4	SB-2017-02-102-1044	Water	09/11/17 13:10	09/14/17 09:35
680-143024-5	SB-2017-05-92-94	Water	09/11/17 12:10	09/14/17 09:35
680-143024-6	SB-2017-02-111-113	Water	09/11/17 15:50	09/14/17 09:35
680-143024-7	FD-07	Water	09/11/17 09:45	09/14/17 09:35
680-143024-8	SB-2017-05-102-104	Water	09/11/17 12:15	09/14/17 09:35
680-143024-9	SB-2017-17-12-14	Water	09/12/17 09:35	09/14/17 09:35
680-143024-10	SB-2017-17-22-24	Water	09/12/17 11:00	09/14/17 09:35
680-143024-11	SB-2017-17-32-34	Water	09/12/17 12:40	09/14/17 09:35
680-143024-12	SB-2017-17-42-44	Water	09/12/17 14:30	09/14/17 09:35
680-143024-13	SB-2017-17-52-54	Water	09/12/17 16:00	09/14/17 09:35
680-143024-14	SB-2017-05-112-114	Water	09/12/17 09:40	09/14/17 09:35
680-143024-15	SB-2017-18-12-14	Water	09/12/17 12:50	09/14/17 09:35
680-143024-16	SB-2017-18-22-24	Water	09/12/17 13:50	09/14/17 09:35
680-143024-17	SB-2017-18-32-34	Water	09/12/17 15:20	09/14/17 09:35
680-143024-18	SB-2017-18-42-44	Water	09/12/17 17:00	09/14/17 09:35
680-143024-19	FD-08	Water	09/12/17 15:25	09/14/17 09:35
680-143024-20	SB-2017-18-52-54	Water	09/13/17 09:35	09/14/17 09:35
680-143024-21	SB-2017-17-62-64	Water	09/13/17 09:30	09/14/17 09:35
680-143024-22	SB-2017-17-72-74	Water	09/13/17 11:00	09/14/17 09:35
680-143024-23	SB-2017-18-62-64	Water	09/13/17 11:35	09/14/17 09:35
680-143024-24	SB-2017-17-78-80	Water	09/13/17 12:20	09/14/17 09:35
680-143024-25	SB-2017-18-72-74	Water	09/13/17 13:10	09/14/17 09:35
680-143024-26	SB-2017-16-22-24	Water	09/13/17 14:30	09/14/17 09:35

TestAmerica Savannah

Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
9060	Organic Carbon, Dissolved (DOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
D	The reported value is from a dilution.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-02-82-84

Lab Sample ID: 680-143024-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	1.6	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	71000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	3700		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	190		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	210	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.7		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-05-82-84

Lab Sample ID: 680-143024-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.8	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	52000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	3100		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	260		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	170	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.7		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-02-92-94

Lab Sample ID: 680-143024-3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	1.8	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	63000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	3800		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1800		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	260	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	3.0		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-02-102-1044

Lab Sample ID: 680-143024-4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.2	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	65000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	8900		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	2400		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	280	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.7		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-05-92-94

Lab Sample ID: 680-143024-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	4.8	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	64000		50	50	17	ug/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-05-92-94 (Continued)

Lab Sample ID: 680-143024-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	3600		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	2500		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	250	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.5		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-02-111-113

Lab Sample ID: 680-143024-6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.2	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	53000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	5200		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	800		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	270	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.6		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: FD-07

Lab Sample ID: 680-143024-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	1.9	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	76000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	3800		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	130		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	210	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.5		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-05-102-104

Lab Sample ID: 680-143024-8

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.4	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	70000	J	50	50	17	ug/L	1		6010C	Dissolved
Manganese	7500	J	10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	630	J	3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	250	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.4		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-17-12-14

Lab Sample ID: 680-143024-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	8.2		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	4800		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1600		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	23	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.6		1.0	0.50	0.16	mg/L	1		9060	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-22-24

Lab Sample ID: 680-143024-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.8		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	10	M		1.0	1.0	mg/L	1		9056A	Total/NA
Iron	1600		50	50	17	ug/L	1		6010C	Dissolved
Manganese	420		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	35	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.46	J		0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-17-32-34

Lab Sample ID: 680-143024-11

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	420	D	5.0	5.0	2.0	mg/L	10		9056A	Total/NA
Sulfate	5.6		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	2600		50	50	17	ug/L	1		6010C	Dissolved
Manganese	660		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	29	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.71	J		0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-17-42-44

Lab Sample ID: 680-143024-12

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	490	D		13	13	mg/L	25		9056A	Total/NA
Sulfate	12		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	3900		50	50	17	ug/L	1		6010C	Dissolved
Manganese	710		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	10		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	37	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.91	J		0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-17-52-54

Lab Sample ID: 680-143024-13

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	970	D		13	13	mg/L	25		9056A	Total/NA
Sulfate	15		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	10000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	860		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	57		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	54	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.3		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-05-112-114

Lab Sample ID: 680-143024-14

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.5	M		1.0	1.0	mg/L	1		9056A	Total/NA
Iron	34000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	12000		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1100		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-05-112-114 (Continued)

Lab Sample ID: 680-143024-14

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	310	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.4		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-18-12-14

Lab Sample ID: 680-143024-15

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	9.3		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	630		50	50	17	ug/L	1	6010C		Dissolved
Manganese	2800		10	3.0	1.0	ug/L	1	6010C		Dissolved
Alkalinity	15	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.3		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-18-22-24

Lab Sample ID: 680-143024-16

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	9.0	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	570		50	50	17	ug/L	1	6010C		Dissolved
Manganese	1900		10	3.0	1.0	ug/L	1	6010C		Dissolved
Alkalinity	12	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.1		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-18-32-34

Lab Sample ID: 680-143024-17

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.6		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	11	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	1500		50	50	17	ug/L	1	6010C		Dissolved
Manganese	1100		10	3.0	1.0	ug/L	1	6010C		Dissolved
Alkalinity	27	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.4		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-18-42-44

Lab Sample ID: 680-143024-18

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	6.7	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	930		50	50	17	ug/L	1	6010C		Dissolved
Manganese	690		10	3.0	1.0	ug/L	1	6010C		Dissolved
Alkalinity	46	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.94	J	1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: FD-08

Lab Sample ID: 680-143024-19

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.4		0.50	0.50	0.20	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: FD-08 (Continued)

Lab Sample ID: 680-143024-19

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	11		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	1100		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1100		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	26	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.68	J	1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-18-52-54

Lab Sample ID: 680-143024-20

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	6.9	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	5500		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1200		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1.8	J	3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	58		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.5		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-17-62-64

Lab Sample ID: 680-143024-21

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	69	D	1.0	1.0	0.40	mg/L	2		9056A	Total/NA
Sulfate	4.3		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	34000	J	50	50	17	ug/L	1		6010C	Dissolved
Manganese	1500	J	10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	140	J	3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	92	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.3		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-17-72-74

Lab Sample ID: 680-143024-22

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.8	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	80000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	3100		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	520		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	190		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.9		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-18-62-64

Lab Sample ID: 680-143024-23

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	21		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.8	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	45000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1400		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	200		3.0	3.0	1.5	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-62-64 (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	140		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.6		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-17-78-80

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	35		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	4.7 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	36000		50	50	17	ug/L	1	6010C		Dissolved
Manganese	5100		10	3.0	1.0	ug/L	1	6010C		Dissolved
Arsenic	93		3.0	3.0	1.5	ug/L	1	6020A		Dissolved
Alkalinity	310 B		5.0	3.2	1.1	mg/L	1	SM 2320B		Total/NA
Dissolved Organic Carbon - Duplicate	3.1		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-18-72-74

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	4.3 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	44000		50	50	17	ug/L	1	6010C		Dissolved
Manganese	1600		10	3.0	1.0	ug/L	1	6010C		Dissolved
Arsenic	250		3.0	3.0	1.5	ug/L	1	6020A		Dissolved
Alkalinity	200 B		5.0	3.2	1.1	mg/L	1	SM 2320B		Total/NA
Dissolved Organic Carbon - Duplicate	2.2		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-16-22-24

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	240 D		5.0	5.0	2.0	mg/L	10		9056A	Total/NA
Sulfate	10		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	17000		50	50	17	ug/L	1	6010C		Dissolved
Manganese	470		10	3.0	1.0	ug/L	1	6010C		Dissolved
Arsenic	440		3.0	3.0	1.5	ug/L	1	6020A		Dissolved
Alkalinity	75 B		5.0	3.2	1.1	mg/L	1	SM 2320B		Total/NA
Dissolved Organic Carbon - Duplicate	2.7		1.0	0.50	0.16	mg/L	1	9060		Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-02-82-84

Lab Sample ID: 680-143024-1

Matrix: Water

Date Collected: 09/11/17 09:40

Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	18		0.50	0.50	0.20	mg/L		09/16/17 22:05	1
Sulfate	1.6 M		1.0	1.0	0.40	mg/L		09/16/17 22:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	71000		50	50	17	ug/L		09/20/17 15:14	1
Manganese	3700		10	3.0	1.0	ug/L		09/20/17 15:14	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	190		3.0	3.0	1.5	ug/L		09/19/17 22:32	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	210 B		5.0	3.2	1.1	mg/L		09/15/17 18:17	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon -	2.7		1.0	0.50	0.16	mg/L		09/19/17 18:23	1
Duplicate									

Client Sample ID: SB-2017-05-82-84

Lab Sample ID: 680-143024-2

Matrix: Water

Date Collected: 09/11/17 10:25

Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	14		0.50	0.50	0.20	mg/L		09/16/17 22:57	1
Sulfate	2.8 M		1.0	1.0	0.40	mg/L		09/16/17 22:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	52000		50	50	17	ug/L		09/20/17 15:00	1
Manganese	3100		10	3.0	1.0	ug/L		09/20/17 15:00	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	260		3.0	3.0	1.5	ug/L		09/19/17 22:11	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	170 B		5.0	3.2	1.1	mg/L		09/15/17 19:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon -	2.7		1.0	0.50	0.16	mg/L		09/19/17 19:13	1
Duplicate									

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-02-92-94

Lab Sample ID: 680-143024-3

Matrix: Water

Date Collected: 09/11/17 11:35
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	19		0.50	0.50	0.20	mg/L		09/16/17 23:32	1
Sulfate	1.8	M	1.0	1.0	0.40	mg/L		09/16/17 23:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	63000		50	50	17	ug/L		09/20/17 14:55	1
Manganese	3800		10	3.0	1.0	ug/L		09/20/17 14:55	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1800		3.0	3.0	1.5	ug/L		09/19/17 22:06	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	260	B	5.0	3.2	1.1	mg/L		09/15/17 18:11	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.0		1.0	0.50	0.16	mg/L		09/19/17 19:30	1

Client Sample ID: SB-2017-02-102-1044

Lab Sample ID: 680-143024-4

Matrix: Water

Date Collected: 09/11/17 13:10
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	18		0.50	0.50	0.20	mg/L		09/16/17 23:49	1
Sulfate	3.2	M	1.0	1.0	0.40	mg/L		09/16/17 23:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	65000		50	50	17	ug/L		09/20/17 15:19	1
Manganese	8900		10	3.0	1.0	ug/L		09/20/17 15:19	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	2400		3.0	3.0	1.5	ug/L		09/19/17 22:36	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	280	B	5.0	3.2	1.1	mg/L		09/15/17 18:51	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.7		1.0	0.50	0.16	mg/L		09/19/17 19:48	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-05-92-94

Lab Sample ID: 680-143024-5

Matrix: Water

Date Collected: 09/11/17 12:10
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	19		0.50	0.50	0.20	mg/L		09/17/17 00:41	1
Sulfate	4.8	M	1.0	1.0	0.40	mg/L		09/17/17 00:41	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	64000		50	50	17	ug/L		09/18/17 20:22	1
Manganese	3600		10	3.0	1.0	ug/L		09/18/17 20:22	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	2500		3.0	3.0	1.5	ug/L		09/19/17 19:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	250	B	5.0	3.2	1.1	mg/L		09/15/17 18:45	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.5		1.0	0.50	0.16	mg/L		09/19/17 20:05	1

Client Sample ID: SB-2017-02-111-113

Lab Sample ID: 680-143024-6

Matrix: Water

Date Collected: 09/11/17 15:50
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	18		0.50	0.50	0.20	mg/L		09/17/17 00:59	1
Sulfate	2.2	M	1.0	1.0	0.40	mg/L		09/17/17 00:59	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	53000		50	50	17	ug/L		09/18/17 20:40	1
Manganese	5200		10	3.0	1.0	ug/L		09/18/17 20:40	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	800		3.0	3.0	1.5	ug/L		09/19/17 19:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	270	B	5.0	3.2	1.1	mg/L		09/15/17 18:05	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.6		1.0	0.50	0.16	mg/L		09/19/17 20:56	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: FD-07

Date Collected: 09/11/17 09:45

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-7

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	18		0.50	0.50	0.20	mg/L		09/17/17 01:16	1
Sulfate	1.9	M	1.0	1.0	0.40	mg/L		09/17/17 01:16	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	76000		50	50	17	ug/L		09/20/17 14:50	1
Manganese	3800		10	3.0	1.0	ug/L		09/20/17 14:50	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	130		3.0	3.0	1.5	ug/L		09/19/17 22:02	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	210	B	5.0	3.2	1.1	mg/L		09/15/17 18:22	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.5		1.0	0.50	0.16	mg/L		09/19/17 21:12	1

Client Sample ID: SB-2017-05-102-104

Date Collected: 09/11/17 12:15

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	17		0.50	0.50	0.20	mg/L		09/17/17 01:34	1
Sulfate	3.4	M	1.0	1.0	0.40	mg/L		09/17/17 01:34	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	70000	J	50	50	17	ug/L		09/20/17 14:18	1
Manganese	7500	J	10	3.0	1.0	ug/L		09/20/17 14:18	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	630	J	3.0	3.0	1.5	ug/L		09/19/17 21:41	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	250	B	5.0	3.2	1.1	mg/L		09/15/17 17:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.4		1.0	0.50	0.16	mg/L		09/19/17 21:31	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-12-14

Lab Sample ID: 680-143024-9

Matrix: Water

Date Collected: 09/12/17 09:35

Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	13		0.50	0.50	0.20	mg/L		09/17/17 01:51	1
Sulfate	8.2		1.0	1.0	0.40	mg/L		09/17/17 01:51	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	4800		50	50	17	ug/L		09/18/17 19:16	1
Manganese	1600		10	3.0	1.0	ug/L		09/18/17 19:16	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 18:35	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	23	B	5.0	3.2	1.1	mg/L		09/15/17 17:34	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.6		1.0	0.50	0.16	mg/L		09/19/17 21:50	1

Client Sample ID: SB-2017-17-22-24

Lab Sample ID: 680-143024-10

Matrix: Water

Date Collected: 09/12/17 11:00

Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	7.8		0.50	0.50	0.20	mg/L		09/19/17 13:46	1
Sulfate	10	M	1.0	1.0	0.40	mg/L		09/19/17 13:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	1600		50	50	17	ug/L		09/18/17 19:30	1
Manganese	420		10	3.0	1.0	ug/L		09/18/17 19:30	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 18:56	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	35	B	5.0	3.2	1.1	mg/L		09/15/17 19:28	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.46	J	1.0	0.50	0.16	mg/L		09/19/17 22:34	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-32-34

Lab Sample ID: 680-143024-11

Matrix: Water

Date Collected: 09/12/17 12:40
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	420	D	5.0	5.0	2.0	mg/L		09/20/17 13:26	10
Sulfate	5.6		1.0	1.0	0.40	mg/L		09/19/17 14:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	2600		50	50	17	ug/L		09/18/17 19:07	1
Manganese	660		10	3.0	1.0	ug/L		09/18/17 19:07	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 18:26	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	29	B	5.0	3.2	1.1	mg/L		09/19/17 19:06	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.71	J	1.0	0.50	0.16	mg/L		09/19/17 22:49	1

Client Sample ID: SB-2017-17-42-44

Lab Sample ID: 680-143024-12

Matrix: Water

Date Collected: 09/12/17 14:30
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	490	D	13	13	5.0	mg/L		09/20/17 14:01	25
Sulfate	12		1.0	1.0	0.40	mg/L		09/19/17 14:56	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	3900		50	50	17	ug/L		09/18/17 20:26	1
Manganese	710		10	3.0	1.0	ug/L		09/18/17 20:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	10		3.0	3.0	1.5	ug/L		09/19/17 19:48	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	37	B	5.0	3.2	1.1	mg/L		09/15/17 17:49	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.91	J	1.0	0.50	0.16	mg/L		09/19/17 23:08	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-52-54

Lab Sample ID: 680-143024-13

Matrix: Water

Date Collected: 09/12/17 16:00
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	970	D	13	13	5.0	mg/L		09/20/17 14:18	25
Sulfate	15		1.0	1.0	0.40	mg/L		09/19/17 15:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	10000		50	50	17	ug/L		09/18/17 19:21	1
Manganese	860		10	3.0	1.0	ug/L		09/18/17 19:21	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	57		3.0	3.0	1.5	ug/L		09/19/17 18:48	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	54	B	5.0	3.2	1.1	mg/L		09/15/17 17:54	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.3		1.0	0.50	0.16	mg/L		09/19/17 23:24	1

Client Sample ID: SB-2017-05-112-114

Lab Sample ID: 680-143024-14

Matrix: Water

Date Collected: 09/12/17 09:40
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	16		0.50	0.50	0.20	mg/L		09/19/17 15:31	1
Sulfate	3.5	M	1.0	1.0	0.40	mg/L		09/19/17 15:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	34000		50	50	17	ug/L		09/18/17 19:25	1
Manganese	12000		10	3.0	1.0	ug/L		09/18/17 19:25	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1100		3.0	3.0	1.5	ug/L		09/19/17 18:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	310	B	5.0	3.2	1.1	mg/L		09/15/17 18:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.4		1.0	0.50	0.16	mg/L		09/19/17 23:43	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-12-14

Lab Sample ID: 680-143024-15

Matrix: Water

Date Collected: 09/12/17 12:50
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	20		0.50	0.50	0.20	mg/L		09/19/17 16:06	1
Sulfate	9.3		1.0	1.0	0.40	mg/L		09/19/17 16:06	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	630		50	50	17	ug/L		09/18/17 19:11	1
Manganese	2800		10	3.0	1.0	ug/L		09/18/17 19:11	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 18:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	15	B	5.0	3.2	1.1	mg/L		09/15/17 18:39	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.3		1.0	0.50	0.16	mg/L		09/20/17 00:48	1

Client Sample ID: SB-2017-18-22-24

Lab Sample ID: 680-143024-16

Matrix: Water

Date Collected: 09/12/17 13:50
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	18		0.50	0.50	0.20	mg/L		09/19/17 16:23	1
Sulfate	9.0	M	1.0	1.0	0.40	mg/L		09/19/17 16:23	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	570		50	50	17	ug/L		09/20/17 15:04	1
Manganese	1900		10	3.0	1.0	ug/L		09/20/17 15:04	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 22:24	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	12	B	5.0	3.2	1.1	mg/L		09/15/17 17:44	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.1		1.0	0.50	0.16	mg/L		09/20/17 01:07	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-32-34

Lab Sample ID: 680-143024-17

Matrix: Water

Date Collected: 09/12/17 15:20
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	4.6		0.50	0.50	0.20	mg/L		09/19/17 17:15	1
Sulfate	11	M	1.0	1.0	0.40	mg/L		09/19/17 17:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	1500		50	50	17	ug/L		09/18/17 19:53	1
Manganese	1100		10	3.0	1.0	ug/L		09/18/17 19:53	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 19:09	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	27	B	5.0	3.2	1.1	mg/L		09/15/17 16:58	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.4		1.0	0.50	0.16	mg/L		09/20/17 01:56	1

Client Sample ID: SB-2017-18-42-44

Lab Sample ID: 680-143024-18

Matrix: Water

Date Collected: 09/12/17 17:00
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	3.8		0.50	0.50	0.20	mg/L		09/19/17 17:33	1
Sulfate	6.7	M	1.0	1.0	0.40	mg/L		09/19/17 17:33	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	930		50	50	17	ug/L		09/18/17 19:58	1
Manganese	690		10	3.0	1.0	ug/L		09/18/17 19:58	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 19:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	46	B	5.0	3.2	1.1	mg/L		09/15/17 17:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.94	J	1.0	0.50	0.16	mg/L		09/20/17 02:14	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: FD-08

Date Collected: 09/12/17 15:25

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-19

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	4.4		0.50	0.50	0.20	mg/L		09/19/17 17:50	1
Sulfate	11		1.0	1.0	0.40	mg/L		09/19/17 17:50	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	1100		50	50	17	ug/L		09/18/17 20:03	1
Manganese	1100		10	3.0	1.0	ug/L		09/18/17 20:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/19/17 19:18	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	26	B	5.0	3.2	1.1	mg/L		09/15/17 16:53	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.68	J	1.0	0.50	0.16	mg/L		09/20/17 02:29	1

Client Sample ID: SB-2017-18-52-54

Date Collected: 09/13/17 09:35

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-20

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	4.1		0.50	0.50	0.20	mg/L		09/19/17 18:08	1
Sulfate	6.9	M	1.0	1.0	0.40	mg/L		09/19/17 18:08	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	5500		50	50	17	ug/L		09/20/17 15:09	1
Manganese	1200		10	3.0	1.0	ug/L		09/20/17 15:09	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1.8	J	3.0	3.0	1.5	ug/L		09/19/17 22:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	58		5.0	3.2	1.1	mg/L		09/21/17 14:53	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.5		1.0	0.50	0.16	mg/L		09/20/17 02:46	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-62-64

Lab Sample ID: 680-143024-21

Matrix: Water

Date Collected: 09/13/17 09:30
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	69	D	1.0	1.0	0.40	mg/L		09/20/17 12:34	2
Sulfate	4.3		1.0	1.0	0.40	mg/L		09/19/17 18:25	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	34000	J	50	50	17	ug/L		09/18/17 18:34	1
Manganese	1500	J	10	3.0	1.0	ug/L		09/18/17 18:34	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	140	J	3.0	3.0	1.5	ug/L		09/19/17 18:05	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	92	B	5.0	3.2	1.1	mg/L		09/15/17 19:07	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.3		1.0	0.50	0.16	mg/L		09/20/17 03:03	1

Client Sample ID: SB-2017-17-72-74

Lab Sample ID: 680-143024-22

Matrix: Water

Date Collected: 09/13/17 11:00
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	27		0.50	0.50	0.20	mg/L		09/19/17 19:17	1
Sulfate	2.8	M	1.0	1.0	0.40	mg/L		09/19/17 19:17	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	80000		50	50	17	ug/L		09/18/17 19:49	1
Manganese	3100		10	3.0	1.0	ug/L		09/18/17 19:49	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	520		3.0	3.0	1.5	ug/L		09/19/17 19:05	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	190		5.0	3.2	1.1	mg/L		09/21/17 14:58	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.9		1.0	0.50	0.16	mg/L		09/20/17 03:49	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-62-64

Lab Sample ID: 680-143024-23

Matrix: Water

Date Collected: 09/13/17 11:35
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	21		0.50	0.50	0.20	mg/L		09/19/17 19:35	1
Sulfate	2.8	M	1.0	1.0	0.40	mg/L		09/19/17 19:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	45000		50	50	17	ug/L		09/18/17 20:17	1
Manganese	1400		10	3.0	1.0	ug/L		09/18/17 20:17	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	200		3.0	3.0	1.5	ug/L		09/19/17 19:40	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	140		5.0	3.2	1.1	mg/L		09/21/17 15:04	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.6		1.0	0.50	0.16	mg/L		09/20/17 04:06	1

Client Sample ID: SB-2017-17-78-80

Lab Sample ID: 680-143024-24

Matrix: Water

Date Collected: 09/13/17 12:20
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	35		0.50	0.50	0.20	mg/L		09/19/17 19:52	1
Sulfate	4.7	M	1.0	1.0	0.40	mg/L		09/19/17 19:52	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	36000		50	50	17	ug/L		09/18/17 20:12	1
Manganese	5100		10	3.0	1.0	ug/L		09/18/17 20:12	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	93		3.0	3.0	1.5	ug/L		09/19/17 19:27	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	310	B	5.0	3.2	1.1	mg/L		09/15/17 19:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.1		1.0	0.50	0.16	mg/L		09/20/17 04:22	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-72-74

Lab Sample ID: 680-143024-25

Matrix: Water

Date Collected: 09/13/17 13:10
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	17		0.50	0.50	0.20	mg/L		09/19/17 20:44	1
Sulfate	4.3	M	1.0	1.0	0.40	mg/L		09/19/17 20:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	44000		50	50	17	ug/L		09/18/17 19:44	1
Manganese	1600		10	3.0	1.0	ug/L		09/18/17 19:44	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	250		3.0	3.0	1.5	ug/L		09/19/17 19:01	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	200	B	5.0	3.2	1.1	mg/L		09/15/17 19:12	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.2		1.0	0.50	0.16	mg/L		09/20/17 05:13	1

Client Sample ID: SB-2017-16-22-24

Lab Sample ID: 680-143024-26

Matrix: Water

Date Collected: 09/13/17 14:30
 Date Received: 09/14/17 09:35

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	240	D	5.0	5.0	2.0	mg/L		09/20/17 14:36	10
Sulfate	10		1.0	1.0	0.40	mg/L		09/19/17 21:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	17000		50	50	17	ug/L		09/18/17 20:07	1
Manganese	470		10	3.0	1.0	ug/L		09/18/17 20:07	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	440		3.0	3.0	1.5	ug/L		09/19/17 19:22	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	75	B	5.0	3.2	1.1	mg/L		09/15/17 19:23	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.7		1.0	0.50	0.16	mg/L		09/20/17 05:30	1

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-494948/2

Client Sample ID: Method Blank
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 494948

Analyte	MB	MB	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Chloride	0.50	U		0.50	0.50	0.20	mg/L		09/16/17 10:53	1
Sulfate		1.0	U		1.0	1.0	0.40	mg/L		09/16/17 10:53	1

Lab Sample ID: LCS 680-494948/3

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 494948

Analyte	Spike Added	LCIS	LCIS	Unit	D	%Rec	Limits	RPD
		Result	Qualifier					
Chloride	10.0	9.78		mg/L		98	87 - 111	
Sulfate	10.0	9.73		mg/L		97	87 - 112	

Lab Sample ID: LCSD 680-494948/4

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 494948

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
Chloride	10.0	9.80		mg/L		98	87 - 111	0	15
Sulfate	10.0	9.77		mg/L		98	87 - 112	0	15

Lab Sample ID: 680-143024-1 MS

Client Sample ID: SB-2017-02-82-84
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 494948

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD
Chloride	18		10.0	27.9		mg/L		103	87 - 111	
Sulfate	1.6	M	10.0	11.0	M	mg/L		95	87 - 112	

Lab Sample ID: 680-143024-1 MSD

Client Sample ID: SB-2017-02-82-84
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 494948

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD
										Limit
Chloride	18		10.0	28.1		mg/L		104	87 - 111	1
Sulfate	1.6	M	10.0	11.2	M	mg/L		97	87 - 112	2

Lab Sample ID: 680-143024-2 DU

Client Sample ID: SB-2017-05-82-84
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 494948

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD
Chloride	14			13.9		mg/L		0.09
Sulfate	2.8	M		2.83	M	mg/L		0

Lab Sample ID: MB 680-495178/11

Client Sample ID: Method Blank
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495178

Analyte	MB	MB	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Chloride	0.50	U		0.50	0.50	0.20	mg/L		09/19/17 12:54	1

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 680-495178/11

Matrix: Water

Analysis Batch: 495178

Analyte	MB		LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		09/19/17 12:54	1

Lab Sample ID: LCS 680-495178/12

Matrix: Water

Analysis Batch: 495178

Analyte	Spike		LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	RPD
	Added	Result							
Chloride	10.0	9.71	mg/L		97	87 - 111			
Sulfate	10.0	10.2	mg/L		102	87 - 112			

Lab Sample ID: LCSD 680-495178/13

Matrix: Water

Analysis Batch: 495178

Analyte	Spike		LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Added	Result								
Chloride	10.0	9.72	mg/L		97	87 - 111			0	15
Sulfate	10.0	10.1	mg/L		101	87 - 112			0	15

Lab Sample ID: 680-143024-10 MS

Matrix: Water

Analysis Batch: 495178

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Chloride	7.8		10.0	17.8		mg/L		100	87 - 111	
Sulfate	10	M	10.0	19.9		mg/L		99	87 - 112	

Lab Sample ID: 680-143024-10 MSD

Matrix: Water

Analysis Batch: 495178

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Chloride	7.8		10.0	17.9		mg/L		101	87 - 111	
Sulfate	10	M	10.0	20.0		mg/L		100	87 - 112	

Lab Sample ID: 680-143024-21 MS

Matrix: Water

Analysis Batch: 495178

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Sulfate	4.3		10.0	14.5		mg/L		101	87 - 112	

Lab Sample ID: 680-143024-21 MSD

Matrix: Water

Analysis Batch: 495178

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Sulfate	4.3		10.0	14.5		mg/L		102	87 - 112	

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 680-143024-14 DU

Matrix: Water

Analysis Batch: 495178

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Chloride	16		16.2		mg/L		0.5	15
Sulfate	3.5	M	3.49	M	mg/L		0.4	15

Lab Sample ID: 680-143024-25 DU

Matrix: Water

Analysis Batch: 495178

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Chloride	17		17.0		mg/L		0	15
Sulfate	4.3	M	4.33	M	mg/L		0.2	15

Lab Sample ID: MB 680-495310/2

Matrix: Water

Analysis Batch: 495310

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	0.50	U	0.50	0.50	0.20	mg/L		09/20/17 09:44	1
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		09/20/17 09:44	1

Lab Sample ID: LCS 680-495310/3

Matrix: Water

Analysis Batch: 495310

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits	RPD	Limit
	Added	Result	Qualifier						
Chloride	10.0	9.99		mg/L		100	87 - 111		
Sulfate	10.0	10.6		mg/L		106	87 - 112		

Lab Sample ID: LCSD 680-495310/4

Matrix: Water

Analysis Batch: 495310

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	Limit
	Added	Result	Qualifier						
Chloride	10.0	9.99		mg/L		100	87 - 111	0	15
Sulfate	10.0	10.6		mg/L		106	87 - 112	1	15

Lab Sample ID: 680-143024-21 MS

Matrix: Water

Analysis Batch: 495310

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Chloride	69	D	20.0	89.4	D	mg/L		103	87 - 111

Lab Sample ID: 680-143024-21 MSD

Matrix: Water

Analysis Batch: 495310

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Chloride	69	D	20.0	89.2	D	mg/L		102	87 - 111

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 680-143024-11 DU

Matrix: Water

Analysis Batch: 495310

Client Sample ID: SB-2017-17-32-34

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Chloride	420	D	423	D	mg/L		0.8	15
Sulfate	10	U	10	U	mg/L		NC	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-494901/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total Recoverable

Analysis Batch: 495230

Prep Batch: 494901

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Iron	50	U	50	50	17	ug/L		09/18/17 18:22	1
Manganese	3.0	U	10	3.0	1.0	ug/L		09/18/17 18:22	1

Lab Sample ID: LCS 680-494901/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total Recoverable

Analysis Batch: 495230

Prep Batch: 494901

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Iron	5000	5030		ug/L		101	87 - 115
Manganese	500	536		ug/L		107	90 - 114

Lab Sample ID: MB 680-495054/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total Recoverable

Analysis Batch: 495534

Prep Batch: 495054

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Iron	50	U	50	50	17	ug/L		09/20/17 14:08	1
Manganese	3.0	U	10	3.0	1.0	ug/L		09/20/17 14:08	1

Lab Sample ID: LCS 680-495054/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total Recoverable

Analysis Batch: 495534

Prep Batch: 495054

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Iron	5000	5290		ug/L		106	87 - 115
Manganese	500	543		ug/L		109	90 - 114

Lab Sample ID: 680-143024-21 MS

Client Sample ID: SB-2017-17-62-64

Matrix: Water

Prep Type: Dissolved

Analysis Batch: 495230

Prep Batch: 494901

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
Iron	34000	J	5000	38100	4	ug/L		80	87 - 115
Manganese	1500	J	500	2070		ug/L		113	90 - 114

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-143024-21 MSD

Matrix: Water

Analysis Batch: 495230

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD
	Result	Qualifier	Added	Result	Qualifier					
Iron	34000	J	5000	37700	4	ug/L		73	87 - 115	1
Manganese	1500	J	500	1880	J	ug/L		75	90 - 114	10

Client Sample ID: SB-2017-17-62-64

Prep Type: Dissolved

Prep Batch: 494901

Lab Sample ID: 680-143024-8 MS

Matrix: Water

Analysis Batch: 495534

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	RPD
	Result	Qualifier	Added	Result	Qualifier					
Iron	70000	J	5000	73500	4	ug/L		77	87 - 115	
Manganese	7500	J	500	7850	4	ug/L		76	90 - 114	

Client Sample ID: SB-2017-05-102-104

Prep Type: Dissolved

Prep Batch: 495054

Lab Sample ID: 680-143024-8 MSD

Matrix: Water

Analysis Batch: 495534

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD
	Result	Qualifier	Added	Result	Qualifier					
Iron	70000	J	5000	71800	4	ug/L		44	87 - 115	2
Manganese	7500	J	500	7670	4	ug/L		39	90 - 114	2

Client Sample ID: SB-2017-05-102-104

Prep Type: Dissolved

Prep Batch: 495054

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-494899/1-A

Matrix: Water

Analysis Batch: 495330

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	3.0	U		3.0	3.0	1.5 ug/L		09/19/17 17:56	1

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 494899

Lab Sample ID: LCS 680-494899/2-A

Matrix: Water

Analysis Batch: 495330

Analyte	Spike	LCS	LCS	Unit	D	%Rec
	Added	Result	Qualifier			
Arsenic	100	106		ug/L	106	84 - 116

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 494899

Lab Sample ID: MB 680-495052/1-A

Matrix: Water

Analysis Batch: 495330

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	3.0	U		3.0	3.0	1.5 ug/L		09/19/17 21:32	1

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 495052

Lab Sample ID: LCS 680-495052/2-A

Matrix: Water

Analysis Batch: 495330

Analyte	Spike	LCS	LCS	Unit	D	%Rec
	Added	Result	Qualifier			
Arsenic	100	108		ug/L	108	84 - 116

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 495052

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 680-143024-21 MS

Matrix: Water

Analysis Batch: 495330

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
Arsenic	140	J	100	242		ug/L		103	84 - 116

Lab Sample ID: 680-143024-21 MSD

Matrix: Water

Analysis Batch: 495330

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	140	J	100	228		ug/L		88	84 - 116	6	20

Lab Sample ID: 680-143024-8 MS

Matrix: Water

Analysis Batch: 495330

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
Arsenic	630	J	100	793	4	ug/L		166	84 - 116

Lab Sample ID: 680-143024-8 MSD

Matrix: Water

Analysis Batch: 495330

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	Limits	RPD	
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	630	J	100	711	4	ug/L		84	84 - 116	11	20

Method: 9060 - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 280-388294/35

Matrix: Water

Analysis Batch: 388294

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Dissolved Organic Carbon - Duplicate	0.50	U	1.0	0.50	0.16	mg/L		09/20/17 00:15	1

Lab Sample ID: MB 280-388294/4

Matrix: Water

Analysis Batch: 388294

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Dissolved Organic Carbon - Duplicate	0.50	U	1.0	0.50	0.16	mg/L		09/19/17 15:24	1

Lab Sample ID: LCS 280-388294/3

Matrix: Water

Analysis Batch: 388294

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Dissolved Organic Carbon - Duplicate	25.0	23.6		mg/L		95	88 - 112

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: 9060 - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: LCS 280-388294/34

Matrix: Water

Analysis Batch: 388294

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
Dissolved Organic Carbon - Duplicate	25.0	24.1		mg/L		96	88 - 112

Lab Sample ID: 680-143024-5 MS

Matrix: Water

Analysis Batch: 388294

Client Sample ID: SB-2017-05-92-94
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
Dissolved Organic Carbon - Duplicate	2.5		25.0	26.0		mg/L		94	88 - 112

Lab Sample ID: 680-143024-5 MSD

Matrix: Water

Analysis Batch: 388294

Client Sample ID: SB-2017-05-92-94
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD
Dissolved Organic Carbon - Duplicate	2.5		25.0	25.9		mg/L		93	88 - 112	0

Lab Sample ID: 680-143024-21 MS

Matrix: Water

Analysis Batch: 388294

Client Sample ID: SB-2017-17-62-64
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
Dissolved Organic Carbon - Duplicate	1.3		25.0	25.4		mg/L		97	88 - 112

Lab Sample ID: 680-143024-21 MSD

Matrix: Water

Analysis Batch: 388294

Client Sample ID: SB-2017-17-62-64
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD
Dissolved Organic Carbon - Duplicate	1.3		25.0	25.2		mg/L		96	88 - 112	1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-387954/30

Matrix: Water

Analysis Batch: 387954

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	3.00	J	5.0	3.2	1.1	mg/L		09/15/17 17:29	1

Lab Sample ID: MB 280-387954/5

Matrix: Water

Analysis Batch: 387954

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	3.45	J	5.0	3.2	1.1	mg/L		09/15/17 15:07	1

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-387954/29

Matrix: Water

Analysis Batch: 387954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			95	
Alkalinity	200	190		mg/L			

Lab Sample ID: LCS 280-387954/4

Matrix: Water

Analysis Batch: 387954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			97	
Alkalinity	200	194		mg/L			

Lab Sample ID: 680-143024-9 DU

Matrix: Water

Analysis Batch: 387954

Client Sample ID: SB-2017-17-12-14
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity	23	B		22.7	mg/L		0.4	10

Lab Sample ID: MB 280-388215/31

Matrix: Water

Analysis Batch: 388215

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity	2.58	J	5.0	3.2	1.1	mg/L		09/19/17 18:24	1

Lab Sample ID: LCS 280-388215/30

Matrix: Water

Analysis Batch: 388215

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			92	
Alkalinity	200	183		mg/L			

Lab Sample ID: MB 280-388592/31

Matrix: Water

Analysis Batch: 388592

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity	2.32	J	5.0	3.2	1.1	mg/L		09/21/17 14:05	1

Lab Sample ID: LCS 280-388592/30

Matrix: Water

Analysis Batch: 388592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec.	Limits
		Result	Qualifier			93	
Alkalinity	200	186		mg/L			

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

HPLC/IC

Analysis Batch: 494948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Total/NA	Water	9056A	1
680-143024-2	SB-2017-05-82-84	Total/NA	Water	9056A	2
680-143024-3	SB-2017-02-92-94	Total/NA	Water	9056A	3
680-143024-4	SB-2017-02-102-1044	Total/NA	Water	9056A	4
680-143024-5	SB-2017-05-92-94	Total/NA	Water	9056A	5
680-143024-6	SB-2017-02-111-113	Total/NA	Water	9056A	6
680-143024-7	FD-07	Total/NA	Water	9056A	7
680-143024-8	SB-2017-05-102-104	Total/NA	Water	9056A	8
680-143024-9	SB-2017-17-12-14	Total/NA	Water	9056A	9
MB 680-494948/2	Method Blank	Total/NA	Water	9056A	10
LCS 680-494948/3	Lab Control Sample	Total/NA	Water	9056A	11
LCSD 680-494948/4	Lab Control Sample Dup	Total/NA	Water	9056A	12
680-143024-1 MS	SB-2017-02-82-84	Total/NA	Water	9056A	13
680-143024-1 MSD	SB-2017-02-82-84	Total/NA	Water	9056A	
680-143024-2 DU	SB-2017-05-82-84	Total/NA	Water	9056A	

Analysis Batch: 495178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-10	SB-2017-17-22-24	Total/NA	Water	9056A	1
680-143024-11	SB-2017-17-32-34	Total/NA	Water	9056A	2
680-143024-12	SB-2017-17-42-44	Total/NA	Water	9056A	3
680-143024-13	SB-2017-17-52-54	Total/NA	Water	9056A	4
680-143024-14	SB-2017-05-112-114	Total/NA	Water	9056A	5
680-143024-15	SB-2017-18-12-14	Total/NA	Water	9056A	6
680-143024-16	SB-2017-18-22-24	Total/NA	Water	9056A	7
680-143024-17	SB-2017-18-32-34	Total/NA	Water	9056A	8
680-143024-18	SB-2017-18-42-44	Total/NA	Water	9056A	9
680-143024-19	FD-08	Total/NA	Water	9056A	10
680-143024-20	SB-2017-18-52-54	Total/NA	Water	9056A	11
680-143024-21	SB-2017-17-62-64	Total/NA	Water	9056A	12
680-143024-22	SB-2017-17-72-74	Total/NA	Water	9056A	13
680-143024-23	SB-2017-18-62-64	Total/NA	Water	9056A	
680-143024-24	SB-2017-17-78-80	Total/NA	Water	9056A	
680-143024-25	SB-2017-18-72-74	Total/NA	Water	9056A	
680-143024-26	SB-2017-16-22-24	Total/NA	Water	9056A	
MB 680-495178/11	Method Blank	Total/NA	Water	9056A	
LCS 680-495178/12	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-495178/13	Lab Control Sample Dup	Total/NA	Water	9056A	
680-143024-10 MS	SB-2017-17-22-24	Total/NA	Water	9056A	
680-143024-10 MSD	SB-2017-17-22-24	Total/NA	Water	9056A	
680-143024-21 MS	SB-2017-17-62-64	Total/NA	Water	9056A	
680-143024-21 MSD	SB-2017-17-62-64	Total/NA	Water	9056A	
680-143024-14 DU	SB-2017-05-112-114	Total/NA	Water	9056A	
680-143024-25 DU	SB-2017-18-72-74	Total/NA	Water	9056A	

Analysis Batch: 495310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-11	SB-2017-17-32-34	Total/NA	Water	9056A	1
680-143024-12	SB-2017-17-42-44	Total/NA	Water	9056A	2
680-143024-13	SB-2017-17-52-54	Total/NA	Water	9056A	3
680-143024-21	SB-2017-17-62-64	Total/NA	Water	9056A	4

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

HPLC/IC (Continued)

Analysis Batch: 495310 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-26	SB-2017-16-22-24	Total/NA	Water	9056A	
MB 680-495310/2	Method Blank	Total/NA	Water	9056A	
LCS 680-495310/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-495310/4	Lab Control Sample Dup	Total/NA	Water	9056A	
680-143024-21 MS	SB-2017-17-62-64	Total/NA	Water	9056A	
680-143024-21 MSD	SB-2017-17-62-64	Total/NA	Water	9056A	
680-143024-11 DU	SB-2017-17-32-34	Total/NA	Water	9056A	

Metals

Prep Batch: 494899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-5	SB-2017-05-92-94	Dissolved	Water	3005A	
680-143024-6	SB-2017-02-111-113	Dissolved	Water	3005A	
680-143024-9	SB-2017-17-12-14	Dissolved	Water	3005A	
680-143024-10	SB-2017-17-22-24	Dissolved	Water	3005A	
680-143024-11	SB-2017-17-32-34	Dissolved	Water	3005A	
680-143024-12	SB-2017-17-42-44	Dissolved	Water	3005A	
680-143024-13	SB-2017-17-52-54	Dissolved	Water	3005A	
680-143024-14	SB-2017-05-112-114	Dissolved	Water	3005A	
680-143024-15	SB-2017-18-12-14	Dissolved	Water	3005A	
680-143024-17	SB-2017-18-32-34	Dissolved	Water	3005A	
680-143024-18	SB-2017-18-42-44	Dissolved	Water	3005A	
680-143024-19	FD-08	Dissolved	Water	3005A	
680-143024-21	SB-2017-17-62-64	Dissolved	Water	3005A	
680-143024-22	SB-2017-17-72-74	Dissolved	Water	3005A	
680-143024-23	SB-2017-18-62-64	Dissolved	Water	3005A	
680-143024-24	SB-2017-17-78-80	Dissolved	Water	3005A	
680-143024-25	SB-2017-18-72-74	Dissolved	Water	3005A	
680-143024-26	SB-2017-16-22-24	Dissolved	Water	3005A	
MB 680-494899/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-494899/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-143024-21 MS	SB-2017-17-62-64	Dissolved	Water	3005A	
680-143024-21 MSD	SB-2017-17-62-64	Dissolved	Water	3005A	

Prep Batch: 494901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-5	SB-2017-05-92-94	Dissolved	Water	3005A	
680-143024-6	SB-2017-02-111-113	Dissolved	Water	3005A	
680-143024-9	SB-2017-17-12-14	Dissolved	Water	3005A	
680-143024-10	SB-2017-17-22-24	Dissolved	Water	3005A	
680-143024-11	SB-2017-17-32-34	Dissolved	Water	3005A	
680-143024-12	SB-2017-17-42-44	Dissolved	Water	3005A	
680-143024-13	SB-2017-17-52-54	Dissolved	Water	3005A	
680-143024-14	SB-2017-05-112-114	Dissolved	Water	3005A	
680-143024-15	SB-2017-18-12-14	Dissolved	Water	3005A	
680-143024-17	SB-2017-18-32-34	Dissolved	Water	3005A	
680-143024-18	SB-2017-18-42-44	Dissolved	Water	3005A	
680-143024-19	FD-08	Dissolved	Water	3005A	
680-143024-21	SB-2017-17-62-64	Dissolved	Water	3005A	

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Metals (Continued)

Prep Batch: 494901 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-22	SB-2017-17-72-74	Dissolved	Water	3005A	
680-143024-23	SB-2017-18-62-64	Dissolved	Water	3005A	
680-143024-24	SB-2017-17-78-80	Dissolved	Water	3005A	
680-143024-25	SB-2017-18-72-74	Dissolved	Water	3005A	
680-143024-26	SB-2017-16-22-24	Dissolved	Water	3005A	
MB 680-494901/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-494901/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-143024-21 MS	SB-2017-17-62-64	Dissolved	Water	3005A	
680-143024-21 MSD	SB-2017-17-62-64	Dissolved	Water	3005A	

Prep Batch: 495052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Dissolved	Water	3005A	
680-143024-2	SB-2017-05-82-84	Dissolved	Water	3005A	
680-143024-3	SB-2017-02-92-94	Dissolved	Water	3005A	
680-143024-4	SB-2017-02-102-1044	Dissolved	Water	3005A	
680-143024-7	FD-07	Dissolved	Water	3005A	
680-143024-8	SB-2017-05-102-104	Dissolved	Water	3005A	
680-143024-16	SB-2017-18-22-24	Dissolved	Water	3005A	
680-143024-20	SB-2017-18-52-54	Dissolved	Water	3005A	
MB 680-495052/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-495052/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-143024-8 MS	SB-2017-05-102-104	Dissolved	Water	3005A	
680-143024-8 MSD	SB-2017-05-102-104	Dissolved	Water	3005A	

Prep Batch: 495054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Dissolved	Water	3005A	
680-143024-2	SB-2017-05-82-84	Dissolved	Water	3005A	
680-143024-3	SB-2017-02-92-94	Dissolved	Water	3005A	
680-143024-4	SB-2017-02-102-1044	Dissolved	Water	3005A	
680-143024-7	FD-07	Dissolved	Water	3005A	
680-143024-8	SB-2017-05-102-104	Dissolved	Water	3005A	
680-143024-16	SB-2017-18-22-24	Dissolved	Water	3005A	
680-143024-20	SB-2017-18-52-54	Dissolved	Water	3005A	
MB 680-495054/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-495054/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-143024-8 MS	SB-2017-05-102-104	Dissolved	Water	3005A	
680-143024-8 MSD	SB-2017-05-102-104	Dissolved	Water	3005A	

Analysis Batch: 495230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-5	SB-2017-05-92-94	Dissolved	Water	6010C	494901
680-143024-6	SB-2017-02-111-113	Dissolved	Water	6010C	494901
680-143024-9	SB-2017-17-12-14	Dissolved	Water	6010C	494901
680-143024-10	SB-2017-17-22-24	Dissolved	Water	6010C	494901
680-143024-11	SB-2017-17-32-34	Dissolved	Water	6010C	494901
680-143024-12	SB-2017-17-42-44	Dissolved	Water	6010C	494901
680-143024-13	SB-2017-17-52-54	Dissolved	Water	6010C	494901
680-143024-14	SB-2017-05-112-114	Dissolved	Water	6010C	494901
680-143024-15	SB-2017-18-12-14	Dissolved	Water	6010C	494901

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Metals (Continued)

Analysis Batch: 495230 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-17	SB-2017-18-32-34	Dissolved	Water	6010C	494901
680-143024-18	SB-2017-18-42-44	Dissolved	Water	6010C	494901
680-143024-19	FD-08	Dissolved	Water	6010C	494901
680-143024-21	SB-2017-17-62-64	Dissolved	Water	6010C	494901
680-143024-22	SB-2017-17-72-74	Dissolved	Water	6010C	494901
680-143024-23	SB-2017-18-62-64	Dissolved	Water	6010C	494901
680-143024-24	SB-2017-17-78-80	Dissolved	Water	6010C	494901
680-143024-25	SB-2017-18-72-74	Dissolved	Water	6010C	494901
680-143024-26	SB-2017-16-22-24	Dissolved	Water	6010C	494901
MB 680-494901/1-A	Method Blank	Total Recoverable	Water	6010C	494901
LCS 680-494901/2-A	Lab Control Sample	Total Recoverable	Water	6010C	494901
680-143024-21 MS	SB-2017-17-62-64	Dissolved	Water	6010C	494901
680-143024-21 MSD	SB-2017-17-62-64	Dissolved	Water	6010C	494901

Analysis Batch: 495330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Dissolved	Water	6020A	495052
680-143024-2	SB-2017-05-82-84	Dissolved	Water	6020A	495052
680-143024-3	SB-2017-02-92-94	Dissolved	Water	6020A	495052
680-143024-4	SB-2017-02-102-1044	Dissolved	Water	6020A	495052
680-143024-5	SB-2017-05-92-94	Dissolved	Water	6020A	494899
680-143024-6	SB-2017-02-111-113	Dissolved	Water	6020A	494899
680-143024-7	FD-07	Dissolved	Water	6020A	495052
680-143024-8	SB-2017-05-102-104	Dissolved	Water	6020A	495052
680-143024-9	SB-2017-17-12-14	Dissolved	Water	6020A	494899
680-143024-10	SB-2017-17-22-24	Dissolved	Water	6020A	494899
680-143024-11	SB-2017-17-32-34	Dissolved	Water	6020A	494899
680-143024-12	SB-2017-17-42-44	Dissolved	Water	6020A	494899
680-143024-13	SB-2017-17-52-54	Dissolved	Water	6020A	494899
680-143024-14	SB-2017-05-112-114	Dissolved	Water	6020A	494899
680-143024-15	SB-2017-18-12-14	Dissolved	Water	6020A	494899
680-143024-16	SB-2017-18-22-24	Dissolved	Water	6020A	495052
680-143024-17	SB-2017-18-32-34	Dissolved	Water	6020A	494899
680-143024-18	SB-2017-18-42-44	Dissolved	Water	6020A	494899
680-143024-19	FD-08	Dissolved	Water	6020A	494899
680-143024-20	SB-2017-18-52-54	Dissolved	Water	6020A	495052
680-143024-21	SB-2017-17-62-64	Dissolved	Water	6020A	494899
680-143024-22	SB-2017-17-72-74	Dissolved	Water	6020A	494899
680-143024-23	SB-2017-18-62-64	Dissolved	Water	6020A	494899
680-143024-24	SB-2017-17-78-80	Dissolved	Water	6020A	494899
680-143024-25	SB-2017-18-72-74	Dissolved	Water	6020A	494899
680-143024-26	SB-2017-16-22-24	Dissolved	Water	6020A	494899
MB 680-494899/1-A	Method Blank	Total Recoverable	Water	6020A	494899
MB 680-495052/1-A	Method Blank	Total Recoverable	Water	6020A	495052
LCS 680-494899/2-A	Lab Control Sample	Total Recoverable	Water	6020A	494899
LCS 680-495052/2-A	Lab Control Sample	Total Recoverable	Water	6020A	495052
680-143024-8 MS	SB-2017-05-102-104	Dissolved	Water	6020A	495052
680-143024-8 MSD	SB-2017-05-102-104	Dissolved	Water	6020A	495052
680-143024-21 MS	SB-2017-17-62-64	Dissolved	Water	6020A	494899
680-143024-21 MSD	SB-2017-17-62-64	Dissolved	Water	6020A	494899

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Metals (Continued)

Analysis Batch: 495534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Dissolved	Water	6010C	495054
680-143024-2	SB-2017-05-82-84	Dissolved	Water	6010C	495054
680-143024-3	SB-2017-02-92-94	Dissolved	Water	6010C	495054
680-143024-4	SB-2017-02-102-1044	Dissolved	Water	6010C	495054
680-143024-7	FD-07	Dissolved	Water	6010C	495054
680-143024-8	SB-2017-05-102-104	Dissolved	Water	6010C	495054
680-143024-16	SB-2017-18-22-24	Dissolved	Water	6010C	495054
680-143024-20	SB-2017-18-52-54	Dissolved	Water	6010C	495054
MB 680-495054/1-A	Method Blank	Total Recoverable	Water	6010C	495054
LCS 680-495054/2-A	Lab Control Sample	Total Recoverable	Water	6010C	495054
680-143024-8 MS	SB-2017-05-102-104	Dissolved	Water	6010C	495054
680-143024-8 MSD	SB-2017-05-102-104	Dissolved	Water	6010C	495054

General Chemistry

Analysis Batch: 387954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Total/NA	Water	SM 2320B	
680-143024-2	SB-2017-05-82-84	Total/NA	Water	SM 2320B	
680-143024-3	SB-2017-02-92-94	Total/NA	Water	SM 2320B	
680-143024-4	SB-2017-02-102-1044	Total/NA	Water	SM 2320B	
680-143024-5	SB-2017-05-92-94	Total/NA	Water	SM 2320B	
680-143024-6	SB-2017-02-111-113	Total/NA	Water	SM 2320B	
680-143024-7	FD-07	Total/NA	Water	SM 2320B	
680-143024-8	SB-2017-05-102-104	Total/NA	Water	SM 2320B	
680-143024-9	SB-2017-17-12-14	Total/NA	Water	SM 2320B	
680-143024-10	SB-2017-17-22-24	Total/NA	Water	SM 2320B	
680-143024-12	SB-2017-17-42-44	Total/NA	Water	SM 2320B	
680-143024-13	SB-2017-17-52-54	Total/NA	Water	SM 2320B	
680-143024-14	SB-2017-05-112-114	Total/NA	Water	SM 2320B	
680-143024-15	SB-2017-18-12-14	Total/NA	Water	SM 2320B	
680-143024-16	SB-2017-18-22-24	Total/NA	Water	SM 2320B	
680-143024-17	SB-2017-18-32-34	Total/NA	Water	SM 2320B	
680-143024-18	SB-2017-18-42-44	Total/NA	Water	SM 2320B	
680-143024-19	FD-08	Total/NA	Water	SM 2320B	
680-143024-21	SB-2017-17-62-64	Total/NA	Water	SM 2320B	
680-143024-24	SB-2017-17-78-80	Total/NA	Water	SM 2320B	
680-143024-25	SB-2017-18-72-74	Total/NA	Water	SM 2320B	
680-143024-26	SB-2017-16-22-24	Total/NA	Water	SM 2320B	
MB 280-387954/30	Method Blank	Total/NA	Water	SM 2320B	
MB 280-387954/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-387954/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-387954/4	Lab Control Sample	Total/NA	Water	SM 2320B	
680-143024-9 DU	SB-2017-17-12-14	Total/NA	Water	SM 2320B	

Analysis Batch: 388215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-11	SB-2017-17-32-34	Total/NA	Water	SM 2320B	
MB 280-388215/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-388215/30	Lab Control Sample	Total/NA	Water	SM 2320B	

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

General Chemistry (Continued)

Analysis Batch: 388294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-1	SB-2017-02-82-84	Dissolved	Water	9060	1
680-143024-2	SB-2017-05-82-84	Dissolved	Water	9060	2
680-143024-3	SB-2017-02-92-94	Dissolved	Water	9060	3
680-143024-4	SB-2017-02-102-1044	Dissolved	Water	9060	4
680-143024-5	SB-2017-05-92-94	Dissolved	Water	9060	5
680-143024-6	SB-2017-02-111-113	Dissolved	Water	9060	6
680-143024-7	FD-07	Dissolved	Water	9060	7
680-143024-8	SB-2017-05-102-104	Dissolved	Water	9060	8
680-143024-9	SB-2017-17-12-14	Dissolved	Water	9060	9
680-143024-10	SB-2017-17-22-24	Dissolved	Water	9060	10
680-143024-11	SB-2017-17-32-34	Dissolved	Water	9060	11
680-143024-12	SB-2017-17-42-44	Dissolved	Water	9060	12
680-143024-13	SB-2017-17-52-54	Dissolved	Water	9060	13
680-143024-14	SB-2017-05-112-114	Dissolved	Water	9060	14
680-143024-15	SB-2017-18-12-14	Dissolved	Water	9060	15
680-143024-16	SB-2017-18-22-24	Dissolved	Water	9060	16
680-143024-17	SB-2017-18-32-34	Dissolved	Water	9060	17
680-143024-18	SB-2017-18-42-44	Dissolved	Water	9060	18
680-143024-19	FD-08	Dissolved	Water	9060	19
680-143024-20	SB-2017-18-52-54	Dissolved	Water	9060	20
680-143024-21	SB-2017-17-62-64	Dissolved	Water	9060	21
680-143024-22	SB-2017-17-72-74	Dissolved	Water	9060	22
680-143024-23	SB-2017-18-62-64	Dissolved	Water	9060	23
680-143024-24	SB-2017-17-78-80	Dissolved	Water	9060	24
680-143024-25	SB-2017-18-72-74	Dissolved	Water	9060	25
680-143024-26	SB-2017-16-22-24	Dissolved	Water	9060	26
MB 280-388294/35	Method Blank	Dissolved	Water	9060	27
MB 280-388294/4	Method Blank	Dissolved	Water	9060	28
LCS 280-388294/3	Lab Control Sample	Dissolved	Water	9060	29
LCS 280-388294/34	Lab Control Sample	Dissolved	Water	9060	30
680-143024-5 MS	SB-2017-05-92-94	Dissolved	Water	9060	31
680-143024-5 MSD	SB-2017-05-92-94	Dissolved	Water	9060	32
680-143024-21 MS	SB-2017-17-62-64	Dissolved	Water	9060	33
680-143024-21 MSD	SB-2017-17-62-64	Dissolved	Water	9060	34

Analysis Batch: 388592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143024-20	SB-2017-18-52-54	Total/NA	Water	SM 2320B	1
680-143024-22	SB-2017-17-72-74	Total/NA	Water	SM 2320B	2
680-143024-23	SB-2017-18-62-64	Total/NA	Water	SM 2320B	3
MB 280-388592/31	Method Blank	Total/NA	Water	SM 2320B	4
LCS 280-388592/30	Lab Control Sample	Total/NA	Water	SM 2320B	5

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-02-82-84

Lab Sample ID: 680-143024-1

Matrix: Water

Date Collected: 09/11/17 09:40

Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A Instrument ID: CICL		1	5 mL	5 mL	494948	09/16/17 22:05	ALR	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C Instrument ID: ICPE		1			495534	09/20/17 15:14	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A Instrument ID: ICPMSC		1			495330	09/19/17 22:32	BWR	TAL SAV
Dissolved	Analysis	9060 Instrument ID: WC_SHI3		1			388294	09/19/17 18:23	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B Instrument ID: WC_AT2		1			387954	09/15/17 18:17	A1D	TAL DEN

Client Sample ID: SB-2017-05-82-84

Lab Sample ID: 680-143024-2

Matrix: Water

Date Collected: 09/11/17 10:25

Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A Instrument ID: CICL		1	5 mL	5 mL	494948	09/16/17 22:57	ALR	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C Instrument ID: ICPE		1			495534	09/20/17 15:00	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A Instrument ID: ICPMSC		1			495330	09/19/17 22:11	BWR	TAL SAV
Dissolved	Analysis	9060 Instrument ID: WC_SHI3		1			388294	09/19/17 19:13	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B Instrument ID: WC_AT2		1			387954	09/15/17 19:01	A1D	TAL DEN

Client Sample ID: SB-2017-02-92-94

Lab Sample ID: 680-143024-3

Matrix: Water

Date Collected: 09/11/17 11:35

Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A Instrument ID: CICL		1	5 mL	5 mL	494948	09/16/17 23:32	ALR	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C Instrument ID: ICPE		1			495534	09/20/17 14:55	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-02-92-94

Date Collected: 09/11/17 11:35

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6020A		1			495330	09/19/17 22:06	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 19:30	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:11	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-02-102-1044

Date Collected: 09/11/17 13:10

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	494948	09/16/17 23:49	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 15:19	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 22:36	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 19:48	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:51	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-05-92-94

Date Collected: 09/11/17 12:10

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	494948	09/17/17 00:41	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:22	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:44	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 20:05	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:45	A1D	TAL DEN
		Instrument ID: WC_AT2								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-02-111-113

Lab Sample ID: 680-143024-6

Matrix: Water

Date Collected: 09/11/17 15:50
 Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	494948	09/17/17 00:59	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:40	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:52	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 20:56	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:05	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: FD-07

Lab Sample ID: 680-143024-7

Matrix: Water

Date Collected: 09/11/17 09:45
 Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	494948	09/17/17 01:16	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 14:50	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 22:02	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 21:12	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:22	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-05-102-104

Lab Sample ID: 680-143024-8

Matrix: Water

Date Collected: 09/11/17 12:15
 Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	494948	09/17/17 01:34	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 14:18	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 21:41	BWR	TAL SAV
		Instrument ID: ICPMSC								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	9060		1			388294	09/19/17 21:31	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 17:59	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-12-14

Lab Sample ID: 680-143024-9

Date Collected: 09/12/17 09:35

Matrix: Water

Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	494948	09/17/17 01:51	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:16	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:35	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 21:50	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 17:34	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-22-24

Lab Sample ID: 680-143024-10

Date Collected: 09/12/17 11:00

Matrix: Water

Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 13:46	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:30	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:56	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 22:34	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 19:28	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-32-34

Lab Sample ID: 680-143024-11

Date Collected: 09/12/17 12:40

Matrix: Water

Date Received: 09/14/17 09:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 14:39	ALR	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-32-34

Date Collected: 09/12/17 12:40

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 14:39	ALR	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9056A		10	5 mL	5 mL	495310	09/20/17 13:26	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:07	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:26	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 22:49	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388215	09/19/17 19:06	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-42-44

Date Collected: 09/12/17 14:30

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 14:56	ALR	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9056A		25	5 mL	5 mL	495310	09/20/17 14:01	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:26	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:48	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 23:08	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 17:49	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-52-54

Date Collected: 09/12/17 16:00

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 15:13	ALR	TAL SAV
		Instrument ID: CICH								

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Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-17-52-54

Date Collected: 09/12/17 16:00

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		25	5 mL	5 mL	495310	09/20/17 14:18	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:21	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:48	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 23:24	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 17:54	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-05-112-114

Date Collected: 09/12/17 09:40

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 15:31	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:25	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:52	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/19/17 23:43	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:56	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-18-12-14

Date Collected: 09/12/17 12:50

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 16:06	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:11	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:31	BWR	TAL SAV
		Instrument ID: ICPMSC								

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Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	9060		1			388294	09/20/17 00:48	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 18:39	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-18-22-24

Date Collected: 09/12/17 13:50

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 16:23	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 15:04	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 22:24	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 01:07	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 17:44	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-18-32-34

Date Collected: 09/12/17 15:20

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 17:15	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:53	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:09	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 01:56	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 16:58	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-18-42-44

Date Collected: 09/12/17 17:00

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 17:33	ALR	TAL SAV

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Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-42-44

Date Collected: 09/12/17 17:00

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 17:33	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:58	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:14	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 02:14	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 17:03	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: FD-08

Date Collected: 09/12/17 15:25

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 17:50	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:03	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:18	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 02:29	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 16:53	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-18-52-54

Date Collected: 09/13/17 09:35

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 18:08	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	495054	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 15:09	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495052	09/18/17 11:09	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 22:28	BWR	TAL SAV
		Instrument ID: ICPMSC								

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Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	9060		1			388294	09/20/17 02:46	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388592	09/21/17 14:53	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-62-64

Date Collected: 09/13/17 09:30

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 18:25	ALR	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9056A		2	5 mL	5 mL	495310	09/20/17 12:34	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 18:34	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 18:05	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 03:03	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 19:07	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-72-74

Date Collected: 09/13/17 11:00

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-22

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 19:17	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:49	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:05	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 03:49	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388592	09/21/17 14:58	A1D	TAL DEN
		Instrument ID: WC_AT2								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Client Sample ID: SB-2017-18-62-64

Date Collected: 09/13/17 11:35

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-23

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 19:35	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:17	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:40	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 04:06	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388592	09/21/17 15:04	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-17-78-80

Date Collected: 09/13/17 12:20

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 19:52	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:12	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:27	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 04:22	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 19:18	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-18-72-74

Date Collected: 09/13/17 13:10

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 20:44	ALR	TAL SAV
		Instrument ID: CICH								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 19:44	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:01	BWR	TAL SAV
		Instrument ID: ICPMSC								

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Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	9060		1			388294	09/20/17 05:13	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 19:12	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-16-22-24

Date Collected: 09/13/17 14:30

Date Received: 09/14/17 09:35

Lab Sample ID: 680-143024-26

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495178	09/19/17 21:19	ALR	TAL SAV
		Instrument ID: CICH								
Total/NA	Analysis	9056A		10	5 mL	5 mL	495310	09/20/17 14:36	ALR	TAL SAV
		Instrument ID: CICL								
Dissolved	Prep	3005A			50 mL	50 mL	494901	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6010C		1			495230	09/18/17 20:07	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	494899	09/15/17 12:52	BJB	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/19/17 19:22	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 05:30	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			387954	09/15/17 19:23	A1D	TAL DEN
		Instrument ID: WC_AT2								

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

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9/27/2017

1081-00X		PO#17-757		Devens - SHL EPA SOW Phase I Aug-Sept 2017		Chain of Custody Record																	
KOMAN Government Solutions, LLC				Analyses Requested																			
Address: 293 Boston Post Road West, Suite 100 Marlborough, MA 01752		Phone: 508-366-7442		Cell: 508-367-7190		Preservatives (see codes)																	
Sampled by [Print Name(s)]/Affiliation <i>Lynne K Loserman</i>		Sampler(s) Signature(s) <i>Lynne K Loserman</i>				N 1 1 S S 1 O S																	
Dissolved Metals-SW6010/6020		1-250 ml poly (HNO ₃)		DOC/SW9060 1-500-mL glass		H ₂ SO ₄ /field filtered		Sulfate/Chloride-SW9056		Alkalinity/SW2320B		1-125-ml poly		1-125-ml poly		Alkalinity/poly		1-125-ml poly		Preservatives (see codes)			
Field Sample ID		Sampled		Matrix (see codes)		Number of Containers																Analyses Requested	
SB-2017-17-12-14		9/12/17 0935		GW		4		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X			
SB-2017-17-22-34		9/12/17 1100		GW		4		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X			
SB-2017-17-32-34		9/12/17 1240		GW		4		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X			
SB-2017-17-42-44		9/12/17 1430		GW		4		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X			
SB-2017-17-52-54		9/12/17 1600		GW		4		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X		X X X X			
SB-2017-																							

7/2017

1081-00X		PO#17-757		Devs - SHL EPA SOW Phase I Aug-Sept 2017		Chain of Custody Record											
KOMAN Government Solutions, LLC						Analyses Requested											
Address: 293 Boston Post Road West, Suite 100 Marlborough, MA 01752		Phone: 508-366-7442 Cell: 508-367-7190		Sampled by [Print Name(s)]/Affiliation		Preservatives (see codes)											
Sampler(s) Signature(s)																	
KGS																	
Field Sample ID	Sampled Date		Time		Matrix (see codes)		Number of Containers		Remarks						Lab. No.		
SB-2017-02-82-84	9-11-17		0940		GW		4		X X X X X X X X								
SB-2017-05-82-84	9-11-17		1025		GW		4		X X X X X X X X								
SB-2017-02-92-94	9-11-17		1135		GW		4		X X X X X X X X								
SB-2017-03-102-104	9-11-17		1310		GW		4		X X X X X X X X								
SB-2017-05-92-94	9-11-17		1210		GW		4		X X X X X X X X								
SB-2017-03-111-113	9-11-17		1550		GW		4		X X X X X X X X								
FO-07	9-11-17		0945		Gw		4		X X X X X X X X								
SB-2017-05-102-104	9-11-17		1215		Gw		4		X X X X X X X X								
courier pick up														Total Number of Containers			
Date Out:	Via:	Relinquished by/Affiliation		Date		Time		Accepted by/Affiliation						Date			
Returned:	Via:	1625		9-13-17		1125		S-13-17 1125						9-13-17 1125			
Additional Comments:														Signature			
* = Dissolved Metals include: Fe, Mn (601C); As (602D)																	
email logins and results to:		Lab Comments		SP = Soil		SW = Surface Water		W = Water (Blanks)									
lekes@komanges.com		Preserve Where Applicable <input type="checkbox"/>		NJ Reduced <input type="checkbox"/>		NJ Full <input type="checkbox"/>		S = Sulfuric Acid + Ice <input type="checkbox"/>									
		On ICE <input type="checkbox"/>		Full CLP <input type="checkbox"/>		Full CLP <input type="checkbox"/>		G = Glass <input type="checkbox"/>									
								C = Composite <input type="checkbox"/>									
								Disk Deliverable <input type="checkbox"/>									
								Other (Specify) _____									
Temperature _____ C																	
Matrix Codes: GW = Groundwater SE = Sediment H = HCL + Ice I = Ice Only N = Nitric Acid + Ice S = Sulfuric Acid + Ice M = Methanol P = Pumping O = Other Q = Other R = Other																	
Preservative Codes: C = Composite G = Glass																	
Collection Method Codes: Page 00 of 04																	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-143024-1

Login Number: 143024

List Source: TestAmerica Savannah

List Number: 1

Creator: Ragnaldsen, Amy E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC Job Number: 680-143024-1

Login Number: 143024

List Source: TestAmerica Denver

List Number: 2

List Creation: 09/14/17 06:40 PM

Creator: Pottruff, Reed W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	False	Refer to Job Narrative for details.
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: KOMAN Government Solutions, LLC

Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	11-05-17 *
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-18
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-18
Kentucky (WW)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-17 *
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17 *
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-17
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Savannah

Accreditation/Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143024-1

Laboratory: TestAmerica Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-143134-1

Client Project/Site: Devens - SHL EPA SOW Phase 1

For:

KOMAN Government Solutions, LLC

293 Boston Post Road

Suite 100

Marlborough, Massachusetts 01752

Attn: Laurie Ekes



Authorized for release by:

9/27/2017 9:53:43 AM

Jerry Lanier, Project Manager I

(912)354-7858 e.3410

jerry.lanier@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Job ID: 680-143134-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: KOMAN Government Solutions, LLC

Project: Devens - SHL EPA SOW Phase 1

Report Number: 680-143134-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 09/16/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.8° C, 1.8° C and 2.6° C.

METALS (ICP) - DISSOLVED

Samples SB-2017-16-42-44 (680-143134-1), SB-2017-16-52-54 (680-143134-2), SB-2017-16-62-64 (680-143134-3), SB-2017-18-82-84 (680-143134-4), SB-2017-18-91-93 (680-143134-5), SB-2017-15-22-24 (680-143134-6), SB-2017-15-32-34 (680-143134-7), SB-2017-15-37-39 (680-143134-8), SB-2017-14-22-24 (680-143134-9), SB-2017-16-32-34 (680-143134-10), SB-2017-14-32-34 (680-143134-11), SB-2017-13-22-24 (680-143134-12), SB-2017-DUP-09 (680-143134-13), SB-2017-13-32-34 (680-143134-14), SB-2017-DUP-10 (680-143134-15) and SB-2017-13-41-43 (680-143134-16) were analyzed for Metals (ICP) - Dissolved in accordance with EPA SW-846 Method 6010C. The samples were prepared on 09/18/2017 and 09/20/2017 and analyzed on 09/20/2017 and 09/21/2017.

Iron failed the recovery criteria low for the MS of sample SB-2017-16-52-54MS (680-143134-2) in batch 680-495534.

Iron and Manganese failed the recovery criteria low for the MSD of sample SB-2017-16-52-54MSD (680-143134-2) in batch 680-495534.

Manganese failed the recovery criteria low for the MSD of sample SB-2017-18-82-84MSD (680-143134-4) in batch 680-495534.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - DISSOLVED

Samples SB-2017-16-42-44 (680-143134-1), SB-2017-16-52-54 (680-143134-2), SB-2017-16-62-64 (680-143134-3), SB-2017-18-82-84 (680-143134-4), SB-2017-18-91-93 (680-143134-5), SB-2017-15-22-24 (680-143134-6), SB-2017-15-32-34 (680-143134-7), SB-2017-15-37-39 (680-143134-8), SB-2017-14-22-24 (680-143134-9), SB-2017-16-32-34 (680-143134-10), SB-2017-14-32-34 (680-143134-11), SB-2017-13-22-24 (680-143134-12), SB-2017-DUP-09 (680-143134-13), SB-2017-13-32-34 (680-143134-14), SB-2017-DUP-10 (680-143134-15) and SB-2017-13-41-43 (680-143134-16) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 09/18/2017 and 09/20/2017 and analyzed on 09/20/2017.

Arsenic failed the recovery criteria low for the MS/MSD of sample SB-2017-16-52-54 (680-143134-2) in batch 680-495430.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Job ID: 680-143134-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

ALKALINITY

Samples SB-2017-16-42-44 (680-143134-1), SB-2017-16-52-54 (680-143134-2), SB-2017-16-62-64 (680-143134-3), SB-2017-18-82-84 (680-143134-4), SB-2017-18-91-93 (680-143134-5), SB-2017-15-22-24 (680-143134-6), SB-2017-15-32-34 (680-143134-7), SB-2017-15-37-39 (680-143134-8), SB-2017-14-22-24 (680-143134-9), SB-2017-16-32-34 (680-143134-10), SB-2017-14-32-34 (680-143134-11), SB-2017-13-22-24 (680-143134-12), SB-2017-DUP-09 (680-143134-13), SB-2017-13-32-34 (680-143134-14), SB-2017-DUP-10 (680-143134-15) and SB-2017-13-41-43 (680-143134-16) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 09/21/2017 and 09/22/2017.

Alkalinity was detected in method blank MB 280-388750/31 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PH

Samples SB-2017-16-42-44 (680-143134-1), SB-2017-16-52-54 (680-143134-2), SB-2017-16-62-64 (680-143134-3) and SB-2017-16-32-34 (680-143134-10) were analyzed for pH in accordance with EPA SW-846 Method 9040C. The samples were analyzed on 09/19/2017.

This analysis is considered a field test and is to be performed within 15 minutes of collection. This sample(s) was performed in the laboratory outside the 15 minute timeframe.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS BY ION CHROMATOGRAPHY (28 DAY)

Samples SB-2017-16-42-44 (680-143134-1), SB-2017-16-52-54 (680-143134-2), SB-2017-16-62-64 (680-143134-3), SB-2017-18-82-84 (680-143134-4), SB-2017-18-91-93 (680-143134-5), SB-2017-15-22-24 (680-143134-6), SB-2017-15-32-34 (680-143134-7), SB-2017-15-37-39 (680-143134-8), SB-2017-14-22-24 (680-143134-9), SB-2017-16-32-34 (680-143134-10), SB-2017-14-32-34 (680-143134-11), SB-2017-13-22-24 (680-143134-12), SB-2017-DUP-09 (680-143134-13), SB-2017-13-32-34 (680-143134-14), SB-2017-DUP-10 (680-143134-15) and SB-2017-13-41-43 (680-143134-16) were analyzed for Anions by Ion Chromatography (28 Day) in accordance with SW 846 9056A. The samples were analyzed on 09/19/2017 and 09/20/2017.

Samples SB-2017-16-62-64 (680-143134-3)[4X], SB-2017-15-22-24 (680-143134-6)[2X], SB-2017-16-32-34 (680-143134-10)[2X], SB-2017-13-22-24 (680-143134-12)[4X], SB-2017-DUP-09 (680-143134-13)[4X], SB-2017-13-32-34 (680-143134-14)[10X] and SB-2017-DUP-10 (680-143134-15)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON

Samples SB-2017-16-42-44 (680-143134-1), SB-2017-16-52-54 (680-143134-2), SB-2017-16-62-64 (680-143134-3), SB-2017-18-82-84 (680-143134-4), SB-2017-18-91-93 (680-143134-5), SB-2017-15-22-24 (680-143134-6), SB-2017-15-32-34 (680-143134-7), SB-2017-15-37-39 (680-143134-8), SB-2017-14-22-24 (680-143134-9), SB-2017-16-32-34 (680-143134-10), SB-2017-14-32-34 (680-143134-11), SB-2017-13-22-24 (680-143134-12), SB-2017-DUP-09 (680-143134-13), SB-2017-13-32-34 (680-143134-14), SB-2017-DUP-10 (680-143134-15) and SB-2017-13-41-43 (680-143134-16) were analyzed for dissolved organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 09/20/2017, 09/22/2017 and 09/23/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-143134-1	SB-2017-16-42-44	Water	09/14/17 09:27	09/16/17 10:00
680-143134-2	SB-2017-16-52-54	Water	09/14/17 11:05	09/16/17 10:00
680-143134-3	SB-2017-16-62-64	Water	09/14/17 13:00	09/16/17 10:00
680-143134-4	SB-2017-18-82-84	Water	09/13/17 14:55	09/16/17 10:00
680-143134-5	SB-2017-18-91-93	Water	09/13/17 17:00	09/16/17 10:00
680-143134-6	SB-2017-15-22-24	Water	09/14/17 10:20	09/16/17 10:00
680-143134-7	SB-2017-15-32-34	Water	09/14/17 11:35	09/16/17 10:00
680-143134-8	SB-2017-15-37-39	Water	09/14/17 12:55	09/16/17 10:00
680-143134-9	SB-2017-14-22-24	Water	09/14/17 15:00	09/16/17 10:00
680-143134-10	SB-2017-16-32-34	Water	09/13/17 15:40	09/16/17 10:00
680-143134-11	SB-2017-14-32-34	Water	09/14/17 16:20	09/16/17 10:00
680-143134-12	SB-2017-13-22-24	Water	09/15/17 09:50	09/16/17 10:00
680-143134-13	SB-2017-DUP-09	Water	09/15/17 09:55	09/16/17 10:00
680-143134-14	SB-2017-13-32-34	Water	09/15/17 11:30	09/16/17 10:00
680-143134-15	SB-2017-DUP-10	Water	09/15/17 11:30	09/16/17 10:00
680-143134-16	SB-2017-13-41-43	Water	09/15/17 13:15	09/16/17 10:00

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Method Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
9040C	pH	SW846	TAL SAV
9060	Organic Carbon, Dissolved (DOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
D	The reported value is from a dilution.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-16-42-44

Lab Sample ID: 680-143134-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.7		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.4	M		1.0	1.0	mg/L	1		9056A	Total/NA
Iron	32000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	980		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	420		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
pH	7.2				SU		1		9040C	Total/NA
Alkalinity	91		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.7		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-16-52-54

Lab Sample ID: 680-143134-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.8	M		1.0	1.0	mg/L	1		9056A	Total/NA
Iron	41000	J	50	50	17	ug/L	1		6010C	Dissolved
Manganese	1400	J	10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1300	J	3.0	3.0	1.5	ug/L	1		6020A	Dissolved
pH	7.3				SU		1		9040C	Total/NA
Alkalinity	190		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.1		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-16-62-64

Lab Sample ID: 680-143134-3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	140	D	2.0	2.0	0.80	mg/L	4		9056A	Total/NA
Sulfate	4.0	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	5300		50	50	17	ug/L	1		6010C	Dissolved
Manganese	7300		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1.7	J	3.0	3.0	1.5	ug/L	1		6020A	Dissolved
pH	7.7				SU		1		9040C	Total/NA
Alkalinity	380		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	3.1		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-18-82-84

Lab Sample ID: 680-143134-4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.4	M		1.0	1.0	mg/L	1		9056A	Total/NA
Iron	41000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	7600	J	10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	94		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	290		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	3.0		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-18-91-93

Lab Sample ID: 680-143134-5

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-18-91-93 (Continued)

Lab Sample ID: 680-143134-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	40		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	7.5 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	15000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	4100		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1.7 J		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	420		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	3.5		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-15-22-24

Lab Sample ID: 680-143134-6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	85 D		1.0	1.0	0.40	mg/L	2		9056A	Total/NA
Sulfate	8.6 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	29000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	4800		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	550		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	51		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.1		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-15-32-34

Lab Sample ID: 680-143134-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.5 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	31000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	850		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1300		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	84		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.8		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-15-37-39

Lab Sample ID: 680-143134-8

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.5 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	53000		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1500		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	2100		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	210		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	3.3		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-14-22-24

Lab Sample ID: 680-143134-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	39		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.1 M		1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	28000		50	50	17	ug/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-14-22-24 (Continued)

Lab Sample ID: 680-143134-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1500		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	2000		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	44		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	2.0		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-16-32-34

Lab Sample ID: 680-143134-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	76	D	1.0	1.0	0.40	mg/L	2		9056A	Total/NA
Sulfate	2.5	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	3500		50	50	17	ug/L	1		6010C	Dissolved
Manganese	570		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	260		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
pH	7.9				SU		1		9040C	Total/NA
Alkalinity	86		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	3.4		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-14-32-34

Lab Sample ID: 680-143134-11

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.7		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	3.6	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	5500		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1700		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	490		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	43		5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	1.6		1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-13-22-24

Lab Sample ID: 680-143134-12

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	130	D	2.0	2.0	0.80	mg/L	4		9056A	Total/NA
Sulfate	9.9	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	120		50	50	17	ug/L	1		6010C	Dissolved
Manganese	86		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	1.5	J	3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	24	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.58	J	1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-DUP-09

Lab Sample ID: 680-143134-13

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	130	D	2.0	2.0	0.80	mg/L	4		9056A	Total/NA
Sulfate	9.8	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	120		50	50	17	ug/L	1		6010C	Dissolved
Manganese	90		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	23	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Detection Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-DUP-09 (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon - Duplicate	1.1		1.0	0.50	0.16	mg/L	1	9060		Dissolved

Client Sample ID: SB-2017-13-32-34

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	340	D	5.0	5.0	2.0	mg/L	10		9056A	Total/NA
Sulfate	5.3	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	870		50	50	17	ug/L	1		6010C	Dissolved
Manganese	160		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	12	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.50	J	1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-DUP-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	340	D	5.0	5.0	2.0	mg/L	10		9056A	Total/NA
Sulfate	5.2	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	880		50	50	17	ug/L	1		6010C	Dissolved
Manganese	160		10	3.0	1.0	ug/L	1		6010C	Dissolved
Alkalinity	13	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.49	J	1.0	0.50	0.16	mg/L	1		9060	Dissolved

Client Sample ID: SB-2017-13-41-43

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.5		0.50	0.50	0.20	mg/L	1		9056A	Total/NA
Sulfate	2.7	M	1.0	1.0	0.40	mg/L	1		9056A	Total/NA
Iron	3700		50	50	17	ug/L	1		6010C	Dissolved
Manganese	1100		10	3.0	1.0	ug/L	1		6010C	Dissolved
Arsenic	3.7		3.0	3.0	1.5	ug/L	1		6020A	Dissolved
Alkalinity	24	B	5.0	3.2	1.1	mg/L	1		SM 2320B	Total/NA
Dissolved Organic Carbon - Duplicate	0.64	J	1.0	0.50	0.16	mg/L	1		9060	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-16-42-44

Lab Sample ID: 680-143134-1

Matrix: Water

Date Collected: 09/14/17 09:27

Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	4.7		0.50	0.50	0.20	mg/L		09/19/17 20:34	1
Sulfate	3.4	M	1.0	1.0	0.40	mg/L		09/19/17 20:34	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	32000		50	50	17	ug/L		09/20/17 12:39	1
Manganese	980		10	3.0	1.0	ug/L		09/20/17 12:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	420		3.0	3.0	1.5	ug/L		09/20/17 02:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
pH	7.2					SU		09/19/17 14:26	1
Alkalinity	91		5.0	3.2	1.1	mg/L		09/21/17 15:23	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.7		1.0	0.50	0.16	mg/L		09/20/17 05:46	1

Client Sample ID: SB-2017-16-52-54

Lab Sample ID: 680-143134-2

Matrix: Water

Date Collected: 09/14/17 11:05

Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	15		0.50	0.50	0.20	mg/L		09/19/17 21:26	1
Sulfate	2.8	M	1.0	1.0	0.40	mg/L		09/19/17 21:26	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	41000	J	50	50	17	ug/L		09/21/17 01:49	1
Manganese	1400	J	10	3.0	1.0	ug/L		09/21/17 01:49	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1300	J	3.0	3.0	1.5	ug/L		09/20/17 16:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
pH	7.3					SU		09/19/17 14:30	1
Alkalinity	190		5.0	3.2	1.1	mg/L		09/21/17 15:28	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.1		1.0	0.50	0.16	mg/L		09/20/17 06:37	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-16-62-64

Lab Sample ID: 680-143134-3

Matrix: Water

Date Collected: 09/14/17 13:00
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	140	D	2.0	2.0	0.80	mg/L		09/20/17 12:52	4
Sulfate	4.0	M	1.0	1.0	0.40	mg/L		09/19/17 22:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	5300		50	50	17	ug/L		09/20/17 13:40	1
Manganese	7300		10	3.0	1.0	ug/L		09/20/17 13:40	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1.7	J	3.0	3.0	1.5	ug/L		09/20/17 03:39	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
pH	7.7					SU		09/19/17 14:34	1
Alkalinity	380		5.0	3.2	1.1	mg/L		09/21/17 15:58	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.1		1.0	0.50	0.16	mg/L		09/20/17 06:54	1

Client Sample ID: SB-2017-18-82-84

Lab Sample ID: 680-143134-4

Matrix: Water

Date Collected: 09/13/17 14:55
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	22		0.50	0.50	0.20	mg/L		09/19/17 22:18	1
Sulfate	2.4	M	1.0	1.0	0.40	mg/L		09/19/17 22:18	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	41000		50	50	17	ug/L		09/20/17 12:16	1
Manganese	7600	J	10	3.0	1.0	ug/L		09/20/17 12:16	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	94		3.0	3.0	1.5	ug/L		09/20/17 02:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	290		5.0	3.2	1.1	mg/L		09/21/17 15:37	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.0		1.0	0.50	0.16	mg/L		09/20/17 07:11	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-18-91-93

Lab Sample ID: 680-143134-5

Matrix: Water

Date Collected: 09/13/17 17:00
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	40		0.50	0.50	0.20	mg/L		09/19/17 22:36	1
Sulfate	7.5	M	1.0	1.0	0.40	mg/L		09/19/17 22:36	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	15000		50	50	17	ug/L		09/20/17 13:07	1
Manganese	4100		10	3.0	1.0	ug/L		09/20/17 13:07	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1.7	J	3.0	3.0	1.5	ug/L		09/20/17 03:09	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	420		5.0	3.2	1.1	mg/L		09/21/17 15:52	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.5		1.0	0.50	0.16	mg/L		09/20/17 07:28	1

Client Sample ID: SB-2017-15-22-24

Lab Sample ID: 680-143134-6

Matrix: Water

Date Collected: 09/14/17 10:20
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	85	D	1.0	1.0	0.40	mg/L		09/20/17 12:00	2
Sulfate	8.6	M	1.0	1.0	0.40	mg/L		09/19/17 23:28	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	29000		50	50	17	ug/L		09/20/17 13:26	1
Manganese	4800		10	3.0	1.0	ug/L		09/20/17 13:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	550		3.0	3.0	1.5	ug/L		09/20/17 03:26	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	51		5.0	3.2	1.1	mg/L		09/21/17 16:07	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.1		1.0	0.50	0.16	mg/L		09/20/17 07:44	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-15-32-34

Lab Sample ID: 680-143134-7

Matrix: Water

Date Collected: 09/14/17 11:35
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	12		0.50	0.50	0.20	mg/L		09/19/17 23:45	1
Sulfate	3.5 M		1.0	1.0	0.40	mg/L		09/19/17 23:45	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	31000		50	50	17	ug/L		09/20/17 13:12	1
Manganese	850		10	3.0	1.0	ug/L		09/20/17 13:12	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1300		3.0	3.0	1.5	ug/L		09/20/17 03:13	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	84		5.0	3.2	1.1	mg/L		09/21/17 16:02	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.8		1.0	0.50	0.16	mg/L		09/20/17 08:35	1

Client Sample ID: SB-2017-15-37-39

Lab Sample ID: 680-143134-8

Matrix: Water

Date Collected: 09/14/17 12:55
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	17		0.50	0.50	0.20	mg/L		09/20/17 00:03	1
Sulfate	2.5 M		1.0	1.0	0.40	mg/L		09/20/17 00:03	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	53000		50	50	17	ug/L		09/20/17 13:59	1
Manganese	1500		10	3.0	1.0	ug/L		09/20/17 13:59	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	2100		3.0	3.0	1.5	ug/L		09/20/17 03:57	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	210		5.0	3.2	1.1	mg/L		09/21/17 15:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.3		1.0	0.50	0.16	mg/L		09/20/17 08:52	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-14-22-24

Lab Sample ID: 680-143134-9

Matrix: Water

Date Collected: 09/14/17 15:00
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	39		0.50	0.50	0.20	mg/L		09/20/17 00:55	1
Sulfate	3.1	M	1.0	1.0	0.40	mg/L		09/20/17 00:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	28000		50	50	17	ug/L		09/20/17 13:21	1
Manganese	1500		10	3.0	1.0	ug/L		09/20/17 13:21	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	2000		3.0	3.0	1.5	ug/L		09/20/17 03:22	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	44		5.0	3.2	1.1	mg/L		09/21/17 15:32	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	2.0		1.0	0.50	0.16	mg/L		09/22/17 23:24	1

Client Sample ID: SB-2017-16-32-34

Lab Sample ID: 680-143134-10

Matrix: Water

Date Collected: 09/13/17 15:40
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	76	D	1.0	1.0	0.40	mg/L		09/20/17 11:43	2
Sulfate	2.5	M	1.0	1.0	0.40	mg/L		09/20/17 01:12	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	3500		50	50	17	ug/L		09/20/17 12:44	1
Manganese	570		10	3.0	1.0	ug/L		09/20/17 12:44	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	260		3.0	3.0	1.5	ug/L		09/20/17 02:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
pH	7.9					SU		09/19/17 14:38	1
Alkalinity	86		5.0	3.2	1.1	mg/L		09/21/17 15:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.4		1.0	0.50	0.16	mg/L		09/22/17 23:41	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-14-32-34

Lab Sample ID: 680-143134-11

Matrix: Water

Date Collected: 09/14/17 16:20
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	4.7		0.50	0.50	0.20	mg/L		09/20/17 01:30	1
Sulfate	3.6	M	1.0	1.0	0.40	mg/L		09/20/17 01:30	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	5500		50	50	17	ug/L		09/20/17 12:49	1
Manganese	1700		10	3.0	1.0	ug/L		09/20/17 12:49	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	490		3.0	3.0	1.5	ug/L		09/20/17 02:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	43		5.0	3.2	1.1	mg/L		09/21/17 15:14	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.6		1.0	0.50	0.16	mg/L		09/22/17 23:58	1

Client Sample ID: SB-2017-13-22-24

Lab Sample ID: 680-143134-12

Matrix: Water

Date Collected: 09/15/17 09:50
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	130	D	2.0	2.0	0.80	mg/L		09/20/17 11:08	4
Sulfate	9.9	M	1.0	1.0	0.40	mg/L		09/20/17 01:47	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	120		50	50	17	ug/L		09/20/17 13:31	1
Manganese	86		10	3.0	1.0	ug/L		09/20/17 13:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	1.5	J	3.0	3.0	1.5	ug/L		09/20/17 03:31	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	24	B	5.0	3.2	1.1	mg/L		09/22/17 21:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.58	J	1.0	0.50	0.16	mg/L		09/23/17 00:57	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-DUP-09

Lab Sample ID: 680-143134-13

Matrix: Water

Date Collected: 09/15/17 09:55
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	130	D	2.0	2.0	0.80	mg/L		09/20/17 10:50	4
Sulfate	9.8	M	1.0	1.0	0.40	mg/L		09/20/17 02:57	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	120		50	50	17	ug/L		09/20/17 13:45	1
Manganese	90		10	3.0	1.0	ug/L		09/20/17 13:45	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/20/17 03:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	23	B	5.0	3.2	1.1	mg/L		09/22/17 21:42	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.1		1.0	0.50	0.16	mg/L		09/23/17 01:13	1

Client Sample ID: SB-2017-13-32-34

Lab Sample ID: 680-143134-14

Matrix: Water

Date Collected: 09/15/17 11:30
 Date Received: 09/16/17 10:00

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	340	D	5.0	5.0	2.0	mg/L		09/20/17 10:33	10
Sulfate	5.3	M	1.0	1.0	0.40	mg/L		09/20/17 03:14	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	870		50	50	17	ug/L		09/20/17 13:03	1
Manganese	160		10	3.0	1.0	ug/L		09/20/17 13:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/20/17 03:05	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	12	B	5.0	3.2	1.1	mg/L		09/22/17 21:37	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.50	J	1.0	0.50	0.16	mg/L		09/23/17 02:04	1

TestAmerica Savannah

Client Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-DUP-10

Date Collected: 09/15/17 11:30

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-15

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	340	D	5.0	5.0	2.0	mg/L		09/20/17 10:16	10
Sulfate	5.2	M	1.0	1.0	0.40	mg/L		09/20/17 03:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	880		50	50	17	ug/L		09/20/17 13:35	1
Manganese	160		10	3.0	1.0	ug/L		09/20/17 13:35	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/20/17 03:35	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	13	B	5.0	3.2	1.1	mg/L		09/22/17 21:27	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.49	J	1.0	0.50	0.16	mg/L		09/23/17 02:18	1

Client Sample ID: SB-2017-13-41-43

Date Collected: 09/15/17 13:15
 Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-16

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloride	6.5		0.50	0.50	0.20	mg/L		09/20/17 03:49	1
Sulfate	2.7	M	1.0	1.0	0.40	mg/L		09/20/17 03:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	3700		50	50	17	ug/L		09/20/17 13:17	1
Manganese	1100		10	3.0	1.0	ug/L		09/20/17 13:17	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.7		3.0	3.0	1.5	ug/L		09/20/17 03:17	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	24	B	5.0	3.2	1.1	mg/L		09/22/17 21:32	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.64	J	1.0	0.50	0.16	mg/L		09/23/17 02:35	1

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-495163/35

Client Sample ID: Method Blank
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	MB	MB	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Chloride	0.50	U		0.50	0.50	0.20	mg/L		09/19/17 19:07	1
Sulfate		1.0	U		1.0	1.0	0.40	mg/L		09/19/17 19:07	1

Lab Sample ID: LCS 680-495163/36

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits	RPD
		Result	Qualifier					
Chloride	10.0	9.81		mg/L		98	87 - 111	
Sulfate	10.0	9.62		mg/L		96	87 - 112	

Lab Sample ID: LCSD 680-495163/37

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
Chloride	10.0	9.81		mg/L		98	87 - 111	0	15
Sulfate	10.0	9.56		mg/L		96	87 - 112	1	15

Lab Sample ID: 680-143134-1 MS

Client Sample ID: SB-2017-16-42-44
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Chloride	4.7		10.0	15.3		mg/L		105	87 - 111	
Sulfate	3.4	M	10.0	13.5	M	mg/L		101	87 - 112	

Lab Sample ID: 680-143134-1 MSD

Client Sample ID: SB-2017-16-42-44
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Chloride	4.7		10.0	15.2		mg/L		104	87 - 111	1
Sulfate	3.4	M	10.0	13.4	M	mg/L		100	87 - 112	1

Lab Sample ID: 680-143134-8 MS

Client Sample ID: SB-2017-15-37-39
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Chloride	17		10.0	27.0		mg/L		102	87 - 111	
Sulfate	2.5	M	10.0	12.3	M	mg/L		98	87 - 112	

Lab Sample ID: 680-143134-8 MSD

Client Sample ID: SB-2017-15-37-39
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier					
Chloride	17		10.0	27.1		mg/L		103	87 - 111	0

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 680-143134-8 MSD

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Sulfate	2.5	M	10.0	12.4	M	mg/L		99	87 - 112	1	15

Lab Sample ID: 680-143134-2 DU

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Chloride	15		14.7		mg/L		0.1	15
Sulfate	2.8	M	2.75	M	mg/L		1	15

Lab Sample ID: 680-143134-12 DU

Matrix: Water

Analysis Batch: 495163

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Sulfate	9.9	M	9.88	M	mg/L		0.2	15

Lab Sample ID: MB 680-495261/2

Matrix: Water

Analysis Batch: 495261

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	0.50	U	0.50	0.50	0.20	mg/L		09/20/17 08:14	1
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		09/20/17 08:14	1

Lab Sample ID: LCS 680-495261/3

Matrix: Water

Analysis Batch: 495261

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Chloride	10.0	9.80		mg/L		98	87 - 111
Sulfate	10.0	9.78		mg/L		98	87 - 112

Lab Sample ID: LCSD 680-495261/4

Matrix: Water

Analysis Batch: 495261

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec.	Limits	RPD	Limit
	Added	Result	Qualifier						
Chloride	10.0	9.79		mg/L		98	87 - 111	0	15
Sulfate	10.0	9.81		mg/L		98	87 - 112	0	15

Lab Sample ID: 680-143134-12 DU

Matrix: Water

Analysis Batch: 495261

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Chloride	130	D	129	D	mg/L		0.1	15
Sulfate	7.8	D M	7.85	D M	mg/L		0	15

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-495062/1-A

Matrix: Water

Analysis Batch: 495534

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 495062

Analyte	MB	MB	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier									
Iron	50	U			50	50	17	ug/L		09/20/17 12:06	1
Manganese	3.0	U			10	3.0	1.0	ug/L		09/20/17 12:06	1

Lab Sample ID: LCS 680-495062/2-A

Matrix: Water

Analysis Batch: 495534

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 495062

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec.	Limits	
	Added	Result	Qualifier							
Iron	5000	5230				ug/L		105	87 - 115	
Manganese	500	538				ug/L		108	90 - 114	

Lab Sample ID: MB 680-495335/1-A

Matrix: Water

Analysis Batch: 495534

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 495335

Analyte	MB	MB	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier									
Iron	50	U			50	50	17	ug/L		09/21/17 01:39	1
Manganese	3.0	U			10	3.0	1.0	ug/L		09/21/17 01:39	1

Lab Sample ID: LCS 680-495335/2-A

Matrix: Water

Analysis Batch: 495534

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 495335

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec.	Limits	
	Added	Result	Qualifier							
Iron	5000	5210				ug/L		104	87 - 115	
Manganese	500	528				ug/L		106	90 - 114	

Lab Sample ID: 680-143134-4 MS

Matrix: Water

Analysis Batch: 495534

Client Sample ID: SB-2017-18-82-84

Prep Type: Dissolved

Prep Batch: 495062

Analyte	Sample	Sample	Spike	MS	MS	Result	Qualifier	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier						
Iron	41000		5000	45900	4			ug/L		107	87 - 115
Manganese	7600	J	500	8120	4			ug/L		105	90 - 114

Lab Sample ID: 680-143134-4 MSD

Matrix: Water

Analysis Batch: 495534

Client Sample ID: SB-2017-18-82-84

Prep Type: Dissolved

Prep Batch: 495062

Analyte	Sample	Sample	Spike	MSD	MSD	Result	Qualifier	Unit	D	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier								
Iron	41000		5000	45400	4			ug/L		97	87 - 115	1	20
Manganese	7600	J	500	8030	4			ug/L		87	90 - 114	1	20

Lab Sample ID: 680-143134-2 MS

Matrix: Water

Analysis Batch: 495534

Client Sample ID: SB-2017-16-52-54

Prep Type: Dissolved

Prep Batch: 495335

Analyte	Sample	Sample	Spike	MS	MS	Result	Qualifier	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier						
Iron	41000	J	5000	45400	4			ug/L		85	87 - 115

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-143134-2 MS

Matrix: Water

Analysis Batch: 495534

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Manganese	1400	J	500	1920		ug/L		98	90 - 114

Lab Sample ID: 680-143134-2 MSD

Matrix: Water

Analysis Batch: 495534

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec.	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Iron	41000	J	5000	42700	4	ug/L		31	87 - 115
Manganese	1400	J	500	1820	J	ug/L		78	90 - 114

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-495061/1-A

Matrix: Water

Analysis Batch: 495330

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/20/17 02:13	1

Lab Sample ID: LCS 680-495061/2-A

Matrix: Water

Analysis Batch: 495330

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Arsenic	100	106		ug/L		106	84 - 116

Lab Sample ID: MB 680-495334/1-A

Matrix: Water

Analysis Batch: 495430

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		09/20/17 16:45	1

Lab Sample ID: LCS 680-495334/2-A

Matrix: Water

Analysis Batch: 495430

Analyte	Spike	LCS	LCS	Unit	D	%Rec.	Limits
	Added	Result	Qualifier				
Arsenic	100	114		ug/L		114	84 - 116

Lab Sample ID: 680-143134-4 MS

Matrix: Water

Analysis Batch: 495330

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier				
Arsenic	94		100	200		ug/L		106	84 - 116

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 680-143134-4 MSD

Matrix: Water

Analysis Batch: 495330

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	94		100	202		ug/L		109	84 - 116	1	20

Lab Sample ID: 680-143134-2 MS

Matrix: Water

Analysis Batch: 495430

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	1300	J	100	1240	4	ug/L		-38	84 - 116		

Lab Sample ID: 680-143134-2 MSD

Matrix: Water

Analysis Batch: 495430

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						
Arsenic	1300	J	100	1150	4	ug/L		-127	84 - 116	7	20

Method: 9040C - pH

Lab Sample ID: LCS 680-495236/7

Matrix: Water

Analysis Batch: 495236

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits	RPD	RPD
	Added	Result	Qualifier						
pH	7.00	7.1		SU		101	63 - 158		

Lab Sample ID: 680-143134-10 DU

Matrix: Water

Analysis Batch: 495236

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				
pH	7.9		7.9		SU		0.1	40

Method: 9060 - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 280-388294/35

Matrix: Water

Analysis Batch: 388294

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Dissolved Organic Carbon - Duplicate	0.50	U	1.0	0.50	0.16	mg/L		09/20/17 00:15	1

Lab Sample ID: LCS 280-388294/34

Matrix: Water

Analysis Batch: 388294

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits	RPD
	Added	Result	Qualifier					
Dissolved Organic Carbon - Duplicate	25.0	24.1		mg/L		96	88 - 112	

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: 9060 - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 680-143134-1 MS

Matrix: Water

Analysis Batch: 388294

Client Sample ID: SB-2017-16-42-44

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits
Dissolved Organic Carbon - Duplicate	1.7		25.0	25.7		mg/L		96	88 - 112

Lab Sample ID: 680-143134-1 MSD

Matrix: Water

Analysis Batch: 388294

Client Sample ID: SB-2017-16-42-44

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD	Limit	
Dissolved Organic Carbon - Duplicate	1.7		25.0	25.9		mg/L		97	88 - 112	1	15

Lab Sample ID: MB 280-388729/35

Matrix: Water

Analysis Batch: 388729

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.50	U		0.50	0.16	mg/L		09/23/17 00:27	1

Lab Sample ID: MB 280-388729/4

Matrix: Water

Analysis Batch: 388729

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	0.50	U		0.50	0.16	mg/L		09/22/17 15:46	1

Lab Sample ID: LCS 280-388729/3

Matrix: Water

Analysis Batch: 388729

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Dissolved Organic Carbon - Duplicate	25.0	24.6		mg/L		99	88 - 112

Lab Sample ID: LCS 280-388729/34

Matrix: Water

Analysis Batch: 388729

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec.	Limits
Dissolved Organic Carbon - Duplicate	25.0	24.5		mg/L		98	88 - 112

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-388591/31

Matrix: Water

Analysis Batch: 388591

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	3.2	U	5.0	3.2	1.1	mg/L		09/21/17 14:51	1

TestAmerica Savannah

QC Sample Results

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-388591/30

Matrix: Water

Analysis Batch: 388591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	%Rec.	
		Result	Qualifier		D	%Rec
Alkalinity	200	198		mg/L	99	90 - 110

Lab Sample ID: MB 280-388750/31

Matrix: Water

Analysis Batch: 388750

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity	2.72	J	5.0	3.2	1.1	mg/L		09/22/17 20:09	1

Lab Sample ID: LCS 280-388750/30

Matrix: Water

Analysis Batch: 388750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	%Rec.	
	Added	Result	Qualifier		D	%Rec
Alkalinity	200	186		mg/L	93	90 - 110

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

HPLC/IC

Analysis Batch: 495163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Total/NA	Water	9056A	1
680-143134-2	SB-2017-16-52-54	Total/NA	Water	9056A	2
680-143134-3	SB-2017-16-62-64	Total/NA	Water	9056A	3
680-143134-4	SB-2017-18-82-84	Total/NA	Water	9056A	4
680-143134-5	SB-2017-18-91-93	Total/NA	Water	9056A	5
680-143134-6	SB-2017-15-22-24	Total/NA	Water	9056A	6
680-143134-7	SB-2017-15-32-34	Total/NA	Water	9056A	7
680-143134-8	SB-2017-15-37-39	Total/NA	Water	9056A	8
680-143134-9	SB-2017-14-22-24	Total/NA	Water	9056A	9
680-143134-10	SB-2017-16-32-34	Total/NA	Water	9056A	10
680-143134-11	SB-2017-14-32-34	Total/NA	Water	9056A	11
680-143134-12	SB-2017-13-22-24	Total/NA	Water	9056A	12
680-143134-13	SB-2017-DUP-09	Total/NA	Water	9056A	13
680-143134-14	SB-2017-13-32-34	Total/NA	Water	9056A	14
680-143134-15	SB-2017-DUP-10	Total/NA	Water	9056A	15
680-143134-16	SB-2017-13-41-43	Total/NA	Water	9056A	16
MB 680-495163/35	Method Blank	Total/NA	Water	9056A	17
LCS 680-495163/36	Lab Control Sample	Total/NA	Water	9056A	18
LCSD 680-495163/37	Lab Control Sample Dup	Total/NA	Water	9056A	19
680-143134-1 MS	SB-2017-16-42-44	Total/NA	Water	9056A	20
680-143134-1 MSD	SB-2017-16-42-44	Total/NA	Water	9056A	21
680-143134-8 MS	SB-2017-15-37-39	Total/NA	Water	9056A	22
680-143134-8 MSD	SB-2017-15-37-39	Total/NA	Water	9056A	23
680-143134-2 DU	SB-2017-16-52-54	Total/NA	Water	9056A	24
680-143134-12 DU	SB-2017-13-22-24	Total/NA	Water	9056A	25

Analysis Batch: 495261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-3	SB-2017-16-62-64	Total/NA	Water	9056A	1
680-143134-6	SB-2017-15-22-24	Total/NA	Water	9056A	2
680-143134-10	SB-2017-16-32-34	Total/NA	Water	9056A	3
680-143134-12	SB-2017-13-22-24	Total/NA	Water	9056A	4
680-143134-13	SB-2017-DUP-09	Total/NA	Water	9056A	5
680-143134-14	SB-2017-13-32-34	Total/NA	Water	9056A	6
680-143134-15	SB-2017-DUP-10	Total/NA	Water	9056A	7
MB 680-495261/2	Method Blank	Total/NA	Water	9056A	8
LCS 680-495261/3	Lab Control Sample	Total/NA	Water	9056A	9
LCSD 680-495261/4	Lab Control Sample Dup	Total/NA	Water	9056A	10
680-143134-12 DU	SB-2017-13-22-24	Total/NA	Water	9056A	11

Metals

Prep Batch: 495061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Dissolved	Water	3005A	1
680-143134-3	SB-2017-16-62-64	Dissolved	Water	3005A	2
680-143134-4	SB-2017-18-82-84	Dissolved	Water	3005A	3
680-143134-5	SB-2017-18-91-93	Dissolved	Water	3005A	4
680-143134-6	SB-2017-15-22-24	Dissolved	Water	3005A	5
680-143134-7	SB-2017-15-32-34	Dissolved	Water	3005A	6

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Metals (Continued)

Prep Batch: 495061 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-8	SB-2017-15-37-39	Dissolved	Water	3005A	1
680-143134-9	SB-2017-14-22-24	Dissolved	Water	3005A	2
680-143134-10	SB-2017-16-32-34	Dissolved	Water	3005A	3
680-143134-11	SB-2017-14-32-34	Dissolved	Water	3005A	4
680-143134-12	SB-2017-13-22-24	Dissolved	Water	3005A	5
680-143134-13	SB-2017-DUP-09	Dissolved	Water	3005A	6
680-143134-14	SB-2017-13-32-34	Dissolved	Water	3005A	7
680-143134-15	SB-2017-DUP-10	Dissolved	Water	3005A	8
680-143134-16	SB-2017-13-41-43	Dissolved	Water	3005A	9
MB 680-495061/1-A	Method Blank	Total Recoverable	Water	3005A	10
LCS 680-495061/2-A	Lab Control Sample	Total Recoverable	Water	3005A	11
680-143134-4 MS	SB-2017-18-82-84	Dissolved	Water	3005A	12
680-143134-4 MSD	SB-2017-18-82-84	Dissolved	Water	3005A	13

Prep Batch: 495062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Dissolved	Water	3005A	1
680-143134-3	SB-2017-16-62-64	Dissolved	Water	3005A	2
680-143134-4	SB-2017-18-82-84	Dissolved	Water	3005A	3
680-143134-5	SB-2017-18-91-93	Dissolved	Water	3005A	4
680-143134-6	SB-2017-15-22-24	Dissolved	Water	3005A	5
680-143134-7	SB-2017-15-32-34	Dissolved	Water	3005A	6
680-143134-8	SB-2017-15-37-39	Dissolved	Water	3005A	7
680-143134-9	SB-2017-14-22-24	Dissolved	Water	3005A	8
680-143134-10	SB-2017-16-32-34	Dissolved	Water	3005A	9
680-143134-11	SB-2017-14-32-34	Dissolved	Water	3005A	10
680-143134-12	SB-2017-13-22-24	Dissolved	Water	3005A	11
680-143134-13	SB-2017-DUP-09	Dissolved	Water	3005A	12
680-143134-14	SB-2017-13-32-34	Dissolved	Water	3005A	13
680-143134-15	SB-2017-DUP-10	Dissolved	Water	3005A	
680-143134-16	SB-2017-13-41-43	Dissolved	Water	3005A	
MB 680-495062/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-495062/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-143134-4 MS	SB-2017-18-82-84	Dissolved	Water	3005A	
680-143134-4 MSD	SB-2017-18-82-84	Dissolved	Water	3005A	

Analysis Batch: 495330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Dissolved	Water	6020A	495061
680-143134-3	SB-2017-16-62-64	Dissolved	Water	6020A	495061
680-143134-4	SB-2017-18-82-84	Dissolved	Water	6020A	495061
680-143134-5	SB-2017-18-91-93	Dissolved	Water	6020A	495061
680-143134-6	SB-2017-15-22-24	Dissolved	Water	6020A	495061
680-143134-7	SB-2017-15-32-34	Dissolved	Water	6020A	495061
680-143134-8	SB-2017-15-37-39	Dissolved	Water	6020A	495061
680-143134-9	SB-2017-14-22-24	Dissolved	Water	6020A	495061
680-143134-10	SB-2017-16-32-34	Dissolved	Water	6020A	495061
680-143134-11	SB-2017-14-32-34	Dissolved	Water	6020A	495061
680-143134-12	SB-2017-13-22-24	Dissolved	Water	6020A	495061
680-143134-13	SB-2017-DUP-09	Dissolved	Water	6020A	495061
680-143134-14	SB-2017-13-32-34	Dissolved	Water	6020A	495061

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Metals (Continued)

Analysis Batch: 495330 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-15	SB-2017-DUP-10	Dissolved	Water	6020A	495061
680-143134-16	SB-2017-13-41-43	Dissolved	Water	6020A	495061
MB 680-495061/1-A	Method Blank	Total Recoverable	Water	6020A	495061
LCS 680-495061/2-A	Lab Control Sample	Total Recoverable	Water	6020A	495061
680-143134-4 MS	SB-2017-18-82-84	Dissolved	Water	6020A	495061
680-143134-4 MSD	SB-2017-18-82-84	Dissolved	Water	6020A	495061

Prep Batch: 495334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-2	SB-2017-16-52-54	Dissolved	Water	3005A	9
MB 680-495334/1-A	Method Blank	Total Recoverable	Water	3005A	10
LCS 680-495334/2-A	Lab Control Sample	Total Recoverable	Water	3005A	11
680-143134-2 MS	SB-2017-16-52-54	Dissolved	Water	3005A	12
680-143134-2 MSD	SB-2017-16-52-54	Dissolved	Water	3005A	13

Prep Batch: 495335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-2	SB-2017-16-52-54	Dissolved	Water	3005A	12
MB 680-495335/1-A	Method Blank	Total Recoverable	Water	3005A	13
LCS 680-495335/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-143134-2 MS	SB-2017-16-52-54	Dissolved	Water	3005A	
680-143134-2 MSD	SB-2017-16-52-54	Dissolved	Water	3005A	

Analysis Batch: 495430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-2	SB-2017-16-52-54	Dissolved	Water	6020A	495334
MB 680-495334/1-A	Method Blank	Total Recoverable	Water	6020A	495334
LCS 680-495334/2-A	Lab Control Sample	Total Recoverable	Water	6020A	495334
680-143134-2 MS	SB-2017-16-52-54	Dissolved	Water	6020A	495334
680-143134-2 MSD	SB-2017-16-52-54	Dissolved	Water	6020A	495334

Analysis Batch: 495534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Dissolved	Water	6010C	495062
680-143134-2	SB-2017-16-52-54	Dissolved	Water	6010C	495335
680-143134-3	SB-2017-16-62-64	Dissolved	Water	6010C	495062
680-143134-4	SB-2017-18-82-84	Dissolved	Water	6010C	495062
680-143134-5	SB-2017-18-91-93	Dissolved	Water	6010C	495062
680-143134-6	SB-2017-15-22-24	Dissolved	Water	6010C	495062
680-143134-7	SB-2017-15-32-34	Dissolved	Water	6010C	495062
680-143134-8	SB-2017-15-37-39	Dissolved	Water	6010C	495062
680-143134-9	SB-2017-14-22-24	Dissolved	Water	6010C	495062
680-143134-10	SB-2017-16-32-34	Dissolved	Water	6010C	495062
680-143134-11	SB-2017-14-32-34	Dissolved	Water	6010C	495062
680-143134-12	SB-2017-13-22-24	Dissolved	Water	6010C	495062
680-143134-13	SB-2017-DUP-09	Dissolved	Water	6010C	495062
680-143134-14	SB-2017-13-32-34	Dissolved	Water	6010C	495062
680-143134-15	SB-2017-DUP-10	Dissolved	Water	6010C	495062
680-143134-16	SB-2017-13-41-43	Dissolved	Water	6010C	495062
MB 680-495062/1-A	Method Blank	Total Recoverable	Water	6010C	495062
MB 680-495335/1-A	Method Blank	Total Recoverable	Water	6010C	495335

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Metals (Continued)

Analysis Batch: 495534 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-495062/2-A	Lab Control Sample	Total Recoverable	Water	6010C	495062
LCS 680-495335/2-A	Lab Control Sample	Total Recoverable	Water	6010C	495335
680-143134-2 MS	SB-2017-16-52-54	Dissolved	Water	6010C	495335
680-143134-2 MSD	SB-2017-16-52-54	Dissolved	Water	6010C	495335
680-143134-4 MS	SB-2017-18-82-84	Dissolved	Water	6010C	495062
680-143134-4 MSD	SB-2017-18-82-84	Dissolved	Water	6010C	495062

General Chemistry

Analysis Batch: 388294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Dissolved	Water	9060	10
680-143134-2	SB-2017-16-52-54	Dissolved	Water	9060	11
680-143134-3	SB-2017-16-62-64	Dissolved	Water	9060	12
680-143134-4	SB-2017-18-82-84	Dissolved	Water	9060	13
680-143134-5	SB-2017-18-91-93	Dissolved	Water	9060	
680-143134-6	SB-2017-15-22-24	Dissolved	Water	9060	
680-143134-7	SB-2017-15-32-34	Dissolved	Water	9060	
680-143134-8	SB-2017-15-37-39	Dissolved	Water	9060	
MB 280-388294/35	Method Blank	Dissolved	Water	9060	
LCS 280-388294/34	Lab Control Sample	Dissolved	Water	9060	
680-143134-1 MS	SB-2017-16-42-44	Dissolved	Water	9060	
680-143134-1 MSD	SB-2017-16-42-44	Dissolved	Water	9060	

Analysis Batch: 388591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Total/NA	Water	SM 2320B	
680-143134-2	SB-2017-16-52-54	Total/NA	Water	SM 2320B	
680-143134-3	SB-2017-16-62-64	Total/NA	Water	SM 2320B	
680-143134-4	SB-2017-18-82-84	Total/NA	Water	SM 2320B	
680-143134-5	SB-2017-18-91-93	Total/NA	Water	SM 2320B	
680-143134-6	SB-2017-15-22-24	Total/NA	Water	SM 2320B	
680-143134-7	SB-2017-15-32-34	Total/NA	Water	SM 2320B	
680-143134-8	SB-2017-15-37-39	Total/NA	Water	SM 2320B	
680-143134-9	SB-2017-14-22-24	Total/NA	Water	SM 2320B	
680-143134-10	SB-2017-16-32-34	Total/NA	Water	SM 2320B	
680-143134-11	SB-2017-14-32-34	Total/NA	Water	SM 2320B	
MB 280-388591/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-388591/30	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 388729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-9	SB-2017-14-22-24	Dissolved	Water	9060	
680-143134-10	SB-2017-16-32-34	Dissolved	Water	9060	
680-143134-11	SB-2017-14-32-34	Dissolved	Water	9060	
680-143134-12	SB-2017-13-22-24	Dissolved	Water	9060	
680-143134-13	SB-2017-DUP-09	Dissolved	Water	9060	
680-143134-14	SB-2017-13-32-34	Dissolved	Water	9060	
680-143134-15	SB-2017-DUP-10	Dissolved	Water	9060	
680-143134-16	SB-2017-13-41-43	Dissolved	Water	9060	

TestAmerica Savannah

QC Association Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

General Chemistry (Continued)

Analysis Batch: 388729 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-388729/35	Method Blank	Dissolved	Water	9060	
MB 280-388729/4	Method Blank	Dissolved	Water	9060	
LCS 280-388729/3	Lab Control Sample	Dissolved	Water	9060	
LCS 280-388729/34	Lab Control Sample	Dissolved	Water	9060	

Analysis Batch: 388750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-12	SB-2017-13-22-24	Total/NA	Water	SM 2320B	
680-143134-13	SB-2017-DUP-09	Total/NA	Water	SM 2320B	
680-143134-14	SB-2017-13-32-34	Total/NA	Water	SM 2320B	
680-143134-15	SB-2017-DUP-10	Total/NA	Water	SM 2320B	
680-143134-16	SB-2017-13-41-43	Total/NA	Water	SM 2320B	
MB 280-388750/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-388750/30	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 495236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-143134-1	SB-2017-16-42-44	Total/NA	Water	9040C	
680-143134-2	SB-2017-16-52-54	Total/NA	Water	9040C	
680-143134-3	SB-2017-16-62-64	Total/NA	Water	9040C	
680-143134-10	SB-2017-16-32-34	Total/NA	Water	9040C	
LCS 680-495236/7	Lab Control Sample	Total/NA	Water	9040C	
680-143134-10 DU	SB-2017-16-32-34	Total/NA	Water	9040C	

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-16-42-44

Lab Sample ID: 680-143134-1

Matrix: Water

Date Collected: 09/14/17 09:27

Date Received: 09/16/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 20:34	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 12:39	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 02:43	BWR	TAL SAV
		Instrument ID: ICPMSC								
Total/NA	Analysis	9040C		1			495236	09/19/17 14:26	JEC	TAL SAV
		Instrument ID: MANTECH								
Dissolved	Analysis	9060		1			388294	09/20/17 05:46	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:23	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-16-52-54

Lab Sample ID: 680-143134-2

Matrix: Water

Date Collected: 09/14/17 11:05

Date Received: 09/16/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 21:26	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495335	09/20/17 11:04	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/21/17 01:49	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495334	09/20/17 11:04	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495430	09/20/17 16:53	BWR	TAL SAV
		Instrument ID: ICPMSC								
Total/NA	Analysis	9040C		1			495236	09/19/17 14:30	JEC	TAL SAV
		Instrument ID: MANTECH								
Dissolved	Analysis	9060		1			388294	09/20/17 06:37	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:28	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-16-62-64

Lab Sample ID: 680-143134-3

Matrix: Water

Date Collected: 09/14/17 13:00

Date Received: 09/16/17 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 22:01	UI	TAL SAV
		Instrument ID: CICK								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-16-62-64

Date Collected: 09/14/17 13:00

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		4	5 mL	5 mL	495261	09/20/17 12:52	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:40	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:39	BWR	TAL SAV
		Instrument ID: ICPMSC								
Total/NA	Analysis	9040C		1			495236	09/19/17 14:34	JEC	TAL SAV
		Instrument ID: MANTECH								
Dissolved	Analysis	9060		1			388294	09/20/17 06:54	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:58	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-18-82-84

Date Collected: 09/13/17 14:55

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 22:18	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 12:16	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 02:21	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388294	09/20/17 07:11	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:37	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-18-91-93

Date Collected: 09/13/17 17:00

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 22:36	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:07	BCB	TAL SAV
		Instrument ID: ICPE								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-18-91-93

Date Collected: 09/13/17 17:00

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:09	BWR	TAL SAV
Dissolved	Analysis	9060		1			388294	09/20/17 07:28	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:52	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-15-22-24

Date Collected: 09/14/17 10:20

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 23:28	UI	TAL SAV
		Instrument ID: CICK								
Total/NA	Analysis	9056A		2	5 mL	5 mL	495261	09/20/17 12:00	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:26	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:26	BWR	TAL SAV
Dissolved	Analysis	9060		1			388294	09/20/17 07:44	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 16:07	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-15-32-34

Date Collected: 09/14/17 11:35

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/19/17 23:45	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:12	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:13	BWR	TAL SAV
Dissolved	Analysis	9060		1			388294	09/20/17 08:35	CCJ	TAL DEN
		Instrument ID: WC-SHI3								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-15-32-34

Date Collected: 09/14/17 11:35

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 16:02	A1D	TAL DEN

Client Sample ID: SB-2017-15-37-39

Date Collected: 09/14/17 12:55

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 00:03	UI	TAL SAV

Instrument ID: CICK

Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:59	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:57	BWR	TAL SAV
Dissolved	Analysis	9060		1			388294	09/20/17 08:52	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:18	A1D	TAL DEN

Instrument ID: WC-AT3

Client Sample ID: SB-2017-14-22-24

Date Collected: 09/14/17 15:00

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 00:55	UI	TAL SAV

Instrument ID: CICK

Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:21	BCB	TAL SAV
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:22	BWR	TAL SAV
Dissolved	Analysis	9060		1			388729	09/22/17 23:24	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:32	A1D	TAL DEN

Instrument ID: WC-SHI3

Instrument ID: WC-AT3

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-16-32-34

Date Collected: 09/13/17 15:40

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst UI	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 01:12		TAL SAV
		Instrument ID: CICK								
Total/NA	Analysis	9056A		2	5 mL	5 mL	495261	09/20/17 11:43	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 12:44	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 02:47	BWR	TAL SAV
		Instrument ID: ICPMSC								
Total/NA	Analysis	9040C		1			495236	09/19/17 14:38	JEC	TAL SAV
		Instrument ID: MANTECH								
Dissolved	Analysis	9060		1			388729	09/22/17 23:41	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:09	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-14-32-34

Date Collected: 09/14/17 16:20

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst UI	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 01:30		TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 12:49	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 02:52	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388729	09/22/17 23:58	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388591	09/21/17 15:14	A1D	TAL DEN
		Instrument ID: WC-AT3								

Client Sample ID: SB-2017-13-22-24

Date Collected: 09/15/17 09:50

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst UI	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 01:47		TAL SAV
		Instrument ID: CICK								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-13-22-24

Date Collected: 09/15/17 09:50

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		4	5 mL	5 mL	495261	09/20/17 11:08	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:31	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:31	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388729	09/23/17 00:57	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388750	09/22/17 21:10	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-DUP-09

Date Collected: 09/15/17 09:55

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 02:57	UI	TAL SAV
		Instrument ID: CICK								
Total/NA	Analysis	9056A		4	5 mL	5 mL	495261	09/20/17 10:50	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:45	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:44	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388729	09/23/17 01:13	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388750	09/22/17 21:42	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-13-32-34

Date Collected: 09/15/17 11:30

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 03:14	UI	TAL SAV
		Instrument ID: CICK								
Total/NA	Analysis	9056A		10	5 mL	5 mL	495261	09/20/17 10:33	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
 Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-13-32-34

Date Collected: 09/15/17 11:30

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6010C		1			495534	09/20/17 13:03	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:05	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388729	09/23/17 02:04	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388750	09/22/17 21:37	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-DUP-10

Date Collected: 09/15/17 11:30

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 03:31	UI	TAL SAV
		Instrument ID: CICK								
Total/NA	Analysis	9056A		10	5 mL	5 mL	495261	09/20/17 10:16	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:35	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:35	BWR	TAL SAV
		Instrument ID: ICPMSC								
Dissolved	Analysis	9060		1			388729	09/23/17 02:18	CCJ	TAL DEN
		Instrument ID: WC_SHI3								
Total/NA	Analysis	SM 2320B		1			388750	09/22/17 21:27	A1D	TAL DEN
		Instrument ID: WC_AT2								

Client Sample ID: SB-2017-13-41-43

Date Collected: 09/15/17 13:15

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	495163	09/20/17 03:49	UI	TAL SAV
		Instrument ID: CICK								
Dissolved	Prep	3005A			50 mL	50 mL	495062	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6010C		1			495534	09/20/17 13:17	BCB	TAL SAV
		Instrument ID: ICPE								
Dissolved	Prep	3005A			50 mL	250 mL	495061	09/18/17 12:05	AJR	TAL SAV
Dissolved	Analysis	6020A		1			495330	09/20/17 03:17	BWR	TAL SAV
		Instrument ID: ICPMSC								

TestAmerica Savannah

Lab Chronicle

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Client Sample ID: SB-2017-13-41-43

Date Collected: 09/15/17 13:15

Date Received: 09/16/17 10:00

Lab Sample ID: 680-143134-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	9060		1			388729	09/23/17 02:35	CCJ	TAL DEN
Total/NA	Analysis	SM 2320B		1			388750	09/22/17 21:32	A1D	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Chain of Custody Record							Page:	1	of:	2		
KOMAN Government Solutions, LLC		Analyses Requested						Laboratory:	Test America - Savannah			
Address: 293 Boston Post Road West, Suite 100 Marlborough, MA 01752								Address:	510 Laroche Avenue Savannah, GA 31404			
Phone: 508-366-7442								Contact:	Jerry Lanier (912)354-7858			
Sampled by [Print Name(s)]/Affiliation <i>Lynne Kostecki</i>								Regulatory Facility No.				
Sampler(s) Signature(s) <i>Lynne Kostecki</i>								Project Name:	Devens Shepley's Hill Landfill			
								Sampling QA P. No.:				
								Approval Date:				
								TAT				
								Other:				
Field Sample ID	Date	Sampled	Matrix (see codes)	Number of Containers	Remarks	Lab. No.	Preservatives (see codes)					
SB-2017-16-42-44	9/14/17	0927	GW	4	X	X	N	I	S	O		
SB-2017-16-52-54	9/14/17	1105	GW	4	X	X						
SB-2017-16-62-64	9/14/17	1300	GW	4	X	X						
SB-2017-18-82-84	9/13/17	1955	GW	1	X	X						
SB-2017-18-91-93	9/13/17	1700	GW	4	X	X						
SB-2017-15-22-24	9/19/17	1020	GW	4	X	X						
SB-2017-15-32-34	9/14/17	1135	bW	4	X	X						
SB-2017-15-37-39	9/14/17	1255	bW	4	X	X						
SB-2017-14-22-24	9/19/17	500	bW	4	X	X						
courier pick up							Total Number of Containers					
Date Out:	Via:	Item No.	Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time				
Returned:	Via:											
Additional Comments: Dissolved Metals include: Fe, Mn (601C), As (6029)												
email logins and results to: lekes@komans.com												
Lab Comments												
SP = Soil SW = Surface Water N = Nitric Acid + Ice S = Sulfuric Acid + Ice C = Composite G=Grab P= Pumping												
Temperature _____ C Other (Specify) _____												
MATRIX CODES: W = Water (Blanks) O = Other H = HCl + Ice I = Ice Only N = Nitric Acid + Ice PRESERVATIVE CODES: S = Sulfuric Acid + Ice M = Methanol O = Other COLLECTION METHOD CODES: Full CLP Disk Deliverable												

1081-00X PO#17-757 Devens - SHL EPA SOW Phase I Aug-Sept 2017

KOMAN Government Solutions, LLC

Address: 293 Boston Post Road West, Suite 100
Marlborough, MA 01752

Phone: 508-366-7442 Cell: 508-367-7190

Sampled by [Print Name(s)]/Affiliation

Lynn Klostergren, Mn b. A/bos

Sampler(s) Signature(s)
Lynn Klostergren

Analyses Requested

Preservatives (see codes)

N I 1 S O S

TAT

Other:

Sampling QAP No.:

Approval Date:

Project Name: Devens Shepley's Hill Landfill

Regulatory Facility No.

Contact: Jerry Lanier (973)354-7858

Address: 510 Laroche Avenue
Savannah, GA 31404

Laboratory: Test America - Savannah

Approvals:

Date: 2/15/17 Time: 14:10

Chain of Custody Record

KGS

1-125 ml poly

1081-00X PO#17-757 Devens - SHL EPA SOW Phase1 - Aug-Sept 2017

KOMAN Government Solutions, LLC

Address: 293 Boston Post Road West, Suite 100
Marlborough, MA 01752

Phone: 508-366-7442 Cell: 508-367-7190

Sampled by [Print Name(s)]/Affiliation

Lekes b. A. lekes
Sampler(s) Signature(s)



Chain of Custody Record

Analyses Requested

Preservatives (see codes)

Number of Containers

Matrix (see codes)

Date Sampled

Time

Field Filtered

Glass

Metals^a

HNO₃

Acidic/Sulfide

CH₃COOH

1-125-mL poly

Login Sample Receipt Checklist

Client: KOMAN Government Solutions, LLC

Job Number: 680-143134-1

Login Number: 143134

List Source: TestAmerica Savannah

List Number: 1

Creator: Ragnaldsen, Amy E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: KOMAN Government Solutions, LLC

Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	11-05-17 *
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-18
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-18
Kentucky (WW)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-17 *
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17 *
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-17
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Savannah

Accreditation/Certification Summary

Client: KOMAN Government Solutions, LLC
Project/Site: Devens - SHL EPA SOW Phase 1

TestAmerica Job ID: 680-143134-1

Laboratory: TestAmerica Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

1

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TestAmerica Savannah

ATTACHMENT 3
Data Validation Reports

Dissolved Metals
SW 846/6010C/6020A
USEPA Level II Review

Site: Former Fort Devens, MA Shepley's Hill Drilling - 2017	SDG #: 680-143024-1
Laboratory: Test America, Savannah, GA	Date: 10/02/2017
KGS Reviewer: Laurie Ekes	Project: 1081

Lab Sample ID	Client Sample ID	Date Sampled	Analysis	Matrix
680-143024-1	SB-2017-02-82-84	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-2	SB-2017-05-82-84	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-3	SB-2017-02-92-94	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-4	SB-2017-02-102-1044	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-5	SB-2017-05-92-94	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-6	SB-2017-02-111-113	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-7	FD-07	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-8	SB-2017-05-102-104	9/11/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-9	SB-2017-17-12-14	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-10	SB-2017-17-22-24	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-11	SB-2017-17-32-34	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-12	SB-2017-17-42-44	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-13	SB-2017-17-52-54	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-14	SB-2017-05-112-114	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-15	SB-2017-18-12-14	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-16	SB-2017-18-22-24	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-17	SB-2017-18-32-34	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-18	SB-2017-18-42-44	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-19	FD-08	9/12/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-20	SB-2017-18-52-54	9/13/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-21	SB-2017-17-62-64	9/13/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-22	SB-2017-17-72-74	9/13/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-23	SB-2017-18-62-64	9/13/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-24	SB-2017-17-78-80	9/13/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-25	SB-2017-18-72-74	9/13/2017	Dissolved As, Fe and Mn	Groundwater
680-143024-26	SB-2017-16-22-24	9/13/2017	Dissolved As, Fe and Mn	Groundwater

Summary - Data validation was performed on the data for twenty-four (24) groundwater profile samples and two (2) field duplicate samples collected from the downgradient and capture zone locations on 9/11, 9/12 and 9/13/2017 during drilling activities at Shepley's Hill. All samples were submitted for dissolved metals analyses by Method SW846/6010C for iron and manganese and Method SW846/6020A for arsenic. Samples were filtered in the field and preserved for sample shipment.

Sample Delivery and Condition – All samples arrived at the laboratory on 9/14/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented. Sample IDs were reviewed on login confirmation reports from the laboratory; any discrepancies due to illegible COCs were corrected prior to sample reporting.

Qualification: None required

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Holding Times – All samples were analyzed within the 6-month holding time required for preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries for the reported target analytes met all %R control limits.

Qualification: None required.

MS/MSD – Sample SB-2017-17-62-64 (Lab Sample ID: 680-143024-21) was spiked and analyzed as MS/MSD samples. The MS/MSD %Rs for iron were outside control limits; the native sample results was greater than four (4) times the spike level. The MSD %R for manganese was below control limits. The %Rs and RPDs for arsenic were within control limits.

The laboratory selected sample SB-2017-05-102-104 (Lab Sample ID: 680-14324-8) to be spiked and analyzed as an additional MS/MSD. The native sample results were greater than four (4) times the spike level for all spiked analytes; %Rs could not be calculated and qualification were not needed.

Qualification: The result for manganese in the spiked sample SB-2017-17-62-64 (Lab Sample ID: 680-143024-21) was qualified as estimated (J).

Method Blank – The method blanks prepared and analyzed with these samples were non-detect for all target analytes.

Qualification: None required.

Field Duplicate – Two field duplicate samples were submitted with this sample set. Sample FD-07 (Lab Sample ID: 680-143024-7) was the field duplicate sample of SB-2017-02-82-84 (Lab Sample ID: 680-143024-1) and sample FD-08 (Lab Sample ID: 680-143024-19) was the field duplicate sample of SB-2017-18-32-43 (Lab Sample ID: 680-143024-17). The calculated RPD for arsenic in the FD sample pair SB-2017-02-82-84/FD-07 was 37%. The calculated RPD for iron in the FD sample pair SB-2017-02-82-84/FD-08 was 31%. Detected results were comparable for the remaining analytes with RPDs less than 10%. FD sample results are summarized in the table below.

Lab Sample ID	680-143024-1	680-143024-7	
Client Sample ID	SB-2017-02-82-84	FD-07	
Collection Date	9/11/2017	9/11/2017	
Analyte	Result ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)	RPD (%)
Iron	71,000	76,000	6.8
Manganese	3,700	3,800	2.7
Arsenic	190	130	37
	680-143024-17	680-143024-19	
	SB-2017-18-32-34	FD-08	
	9/12/2017	9/12/2017	
	Result ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)	RPD (%)
Iron	1,500	1,100	31
Manganese	1,100	1,100	0
Arsenic	3.0 U	3.0 U	0

Qualification: The results for arsenic in FD samples SB-2017-02-82-84 and FD-07 and the results for iron in FD samples SB-2017-02-82-84 and FD-08 were qualified as estimated (J).

Compound Quantitation – Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “PQL U.” Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The dissolved metals results reported in this SDG are acceptable with the noted qualifications and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value ($\mu\text{g/L}$)	Lab Qualifier	Validated Value	Validation Qualifier ($\mu\text{g/L}$)
680-143024-1	SB-2017-02-82-84	Dissolved As	190		190	J
680-143024-2	SB-2017-05-82-84	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-3	SB-2017-02-92-94	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-4	SB-2017-02-102-1044	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-5	SB-2017-05-92-94	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-6	SB-2017-02-111-113	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-7	FD-07	Dissolved As	130		130	J
680-143024-8	SB-2017-05-102-104	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-9	SB-2017-17-12-14	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-10	SB-2017-17-22-24	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-11	SB-2017-17-32-34	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-12	SB-2017-17-42-44	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-13	SB-2017-17-52-54	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-14	SB-2017-05-112-114	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-15	SB-2017-18-12-14	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-16	SB-2017-18-22-24	Dissolved As, Fe and Mn		No qualifications needed.		
680-143024-17	SB-2017-18-32-34	Dissolved Fe	1,500		1,500	J
680-143024-18	SB-2017-18-42-44	Dissolved As, Fe and Mn		No qualifications needed.		

Lab Sample ID	Client Sample ID	Analysis	Lab Value (µg/L)	Lab Qualifier	Validated Value	Validation Qualifier (µg/L)
680-143024-19	FD-08	Dissolved Fe	1,100		1,100	J
680-143024-20	SB-2017-18-52-54	Dissolved As, Fe and Mn			No qualifications needed.	
680-143024-21	SB-2017-17-62-64	Dissolved As, Fe and Mn			No qualifications needed.	
680-143024-22	SB-2017-17-72-74	Dissolved As, Fe and Mn			No qualifications needed.	
680-143024-23	SB-2017-18-62-64	Dissolved As, Fe and Mn			No qualifications needed.	
680-143024-24	SB-2017-17-78-80	Dissolved As, Fe and Mn			No qualifications needed.	
680-143024-25	SB-2017-18-72-74	Dissolved As, Fe and Mn			No qualifications needed.	
680-143024-26	SB-2017-16-22-24	Dissolved As, Fe and Mn			No qualifications needed.	

Miscellaneous Chemistry Parameters

Alkalinity (SM2320B), Sulfate/Chloride (SW9056A), Dissolved Organic Carbon (DOC) (SW9060)
USEPA Level II Review

Site: Former Fort Devens, MA Shepley's Hill Drilling - 2017	SDG #: 680-143024-1
Laboratory: Test America, Savannah, GA	Date: 10/02/2017
KGS Reviewer: Laurie Ekes	Project: 1081

Lab Sample ID	Client Sample ID	Date Sampled	Analysis	Matrix
680-143024-1	SB-2017-02-82-84	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-2	SB-2017-05-82-84	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-3	SB-2017-02-92-94	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-4	SB-2017-02-102-104	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-5	SB-2017-05-92-94	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-6	SB-2017-02-111-113	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-7	FD-07	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-8	SB-2017-05-102-104	9/11/2017	Miscellaneous Parameters	Groundwater
680-143024-9	SB-2017-17-12-14	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-10	SB-2017-17-22-24	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-11	SB-2017-17-32-34	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-12	SB-2017-17-42-44	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-13	SB-2017-17-52-54	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-14	SB-2017-05-112-114	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-15	SB-2017-18-12-14	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-16	SB-2017-18-22-24	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-17	SB-2017-18-32-34	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-18	SB-2017-18-42-44	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-19	FD-08	9/12/2017	Miscellaneous Parameters	Groundwater
680-143024-20	SB-2017-18-52-54	9/13/2017	Miscellaneous Parameters	Groundwater
680-143024-21	SB-2017-17-62-64	9/13/2017	Miscellaneous Parameters	Groundwater
680-143024-22	SB-2017-17-72-74	9/13/2017	Miscellaneous Parameters	Groundwater
680-143024-23	SB-2017-18-62-64	9/13/2017	Miscellaneous Parameters	Groundwater
680-143024-24	SB-2017-17-78-80	9/13/2017	Miscellaneous Parameters	Groundwater
680-143024-25	SB-2017-18-72-74	9/13/2017	Miscellaneous Parameters	Groundwater
680-143024-26	SB-2017-16-22-24	9/13/2017	Miscellaneous Parameters	Groundwater

Summary - Data validation was performed on the data for twenty-four (24) groundwater profile samples and two (2) field duplicate samples collected from upgradient and capture zone locations on 9/11, 9/12 and 9/13/2017 during drilling activities at Shepley's Hill. All samples were submitted for

the miscellaneous wet chemistry analyses listed above. Samples submitted for dissolved organic carbon (DOC) analyses were field filtered. The samples submitted for alkalinity and DOC analyses were shipped to Test America Denver for analysis.

Sample Delivery and Condition – All samples arrived at the laboratory on 9/14/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented. Sample IDs were reviewed on login confirmation reports from the laboratory; any discrepancies due to illegible COCs were corrected prior to sample reporting.

Qualification: None required.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Holding Times – All samples were analyzed within the respective holding times required for preserved aqueous samples.

Qualification: None required.

Method Blank – The method blanks for DOC< chloride and sulfate were free from contamination. Low level contamination was detected in the method blanks prepared and analyzed for alkalinity ranging from 2.32 to 3.45 mg/L. The alkalinity results for the majority of samples were greater than ten times the blank levels.

Qualification: The low-level results for alkalinity (15 mg/L and 12 mg/L), less than ten times the blank levels were qualified, as non-detect in samples SB-2017-18-12-14 and SB-2017-18-22-24 (Lab Sample IDs: 680-143024-15 and -16).

Laboratory Control Sample – The LCS %R results for all methods associated with these samples met the control limits.

Qualification: None required.

MS/MSD – Sample SB-2017-17-62-64 (Lab Sample ID: 680-143024-21) was spiked and analyzed as MS/MSD samples for chloride, sulfate and DOC. The %Rs and RPDs were with control limits for all spiked analytes.

Qualification: None required.

Field Duplicate – Two field duplicate samples were submitted with this sample set. Sample FD-07 (Lab Sample ID: 680-143024-7) was the field duplicate sample of SB-2017-02-82-84 (Lab Sample ID: 680-143024-1) and sample FD-08 (Lab Sample ID: 680-143024-19) was the field duplicate sample of SB-2017-18-32-43 (Lab Sample ID: 680-143024-17). Detected results were comparable for all analytes with RPDs less than 20% with the exception of DOC in the FD sample pair SB-2017-02-82-84/FD-08, which had a %RPD of 69%. This discrepancy is likely due to the low level DOC results.

FD sample results are summarized in the table below.

Lab Sample ID	680-143024-1	680-143024-7	
Client Sample ID	SB-2017-02-82-84	FD-07	
Collection Date	9/11/2017	9/11/2017	
	Result (mg/L)	Result (mg/L)	RPD (%)
Chloride	18	18	0
Sulfate	1.6	1.9	17
DOC	2.7	2.5	7.7
Alkalinity	210	210	0
	680-143024-17	680-143024-19	
	SB-2017-18-32-34	FD-08	
	9/12/2017	9/12/2017	
	Result (mg/L)	Result (mg/L)	RPD (%)
Chloride	4.6	4.4	4.6
Sulfate	11	11	0
DOC	1.4	0.68	69
Alkalinity	27	26	3.8

Qualification: The DOC results in the FD sample pair SB-2017-02-82-84 and FD-08 were qualified as estimated (J).

Compound Quantitation – Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “LOQ U.” Analyte detections below the LOQ were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The miscellaneous parameter results reported in this SDG are acceptable with the noted qualifications and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (mg/L)	Lab Qualifier	Validated Value	Validation Qualifier (mg/L)
680-143024-1	SB-2017-02-82-84	Miscellaneous Parameters		No qualifications needed.		
680-143024-2	SB-2017-05-82-84	Miscellaneous Parameters		No qualifications needed.		
680-143024-3	SB-2017-02-92-94	Miscellaneous Parameters		No qualifications needed.		
680-143024-4	SB-2017-02-102-1044	Miscellaneous Parameters		No qualifications needed.		
680-143024-5	SB-2017-05-92-94	Miscellaneous Parameters		No qualifications needed.		
680-143024-6	SB-2017-02-111-113	Miscellaneous Parameters		No qualifications needed.		
680-143024-7	FD-07	Miscellaneous Parameters		No qualifications needed.		
680-143024-8	SB-2017-05-102-104	Miscellaneous Parameters		No qualifications needed.		
680-143024-9	SB-2017-17-12-14	Miscellaneous Parameters		No qualifications needed.		
680-143024-10	SB-2017-17-22-24	Miscellaneous Parameters		No qualifications needed.		
680-143024-11	SB-2017-17-32-34	Miscellaneous Parameters		No qualifications needed.		
680-143024-12	SB-2017-17-42-44	Miscellaneous Parameters		No qualifications needed.		
680-143024-13	SB-2017-17-52-54	Miscellaneous Parameters		No qualifications needed.		
680-143024-14	SB-2017-05-112-114	Miscellaneous Parameters		No qualifications needed.		
680-143024-15	SB-2017-18-12-14	Alkalinity	15	B	15	U

Lab Sample ID	Client Sample ID	Analysis	Lab Value (mg/L)	Lab Qualifier	Validated Value	Validation Qualifier (mg/L)
680-143024-16	SB-2017-18-22-24	Alkalinity	12	B	12	U
680-143024-17	SB-2017-18-32-34	DOC	1.4		1.4	J
680-143024-18	SB-2017-18-42-44	Miscellaneous Parameters	No qualifications needed.			
680-143024-19	FD-08	DOC	0.68	J	0.68	J
680-143024-20	SB-2017-18-52-54	Miscellaneous Parameters	No qualifications needed.			
680-143024-21	SB-2017-17-62-64	Miscellaneous Parameters	No qualifications needed.			
680-143024-22	SB-2017-17-72-74	Miscellaneous Parameters	No qualifications needed.			
680-143024-23	SB-2017-18-62-64	Miscellaneous Parameters	No qualifications needed.			
680-143024-24	SB-2017-17-78-80	Miscellaneous Parameters	No qualifications needed.			
680-143024-25	SB-2017-18-72-74	Miscellaneous Parameters	No qualifications needed.			
680-143024-26	SB-2017-16-22-24	Miscellaneous Parameters	No qualifications needed.			

SHL 2017 Drilling Validated Data - 143024

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL	
680-143024-1	SB-2017-02-82-84	9/11/2017	6010C	Dissolved	7439-89-6	Iron	71,000		ug/L	50	50	17	
680-143024-1	SB-2017-02-82-84	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	3,700		ug/L	10	3	1	
680-143024-1	SB-2017-02-82-84	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	190		ug/L	3	3	1.5	
680-143024-1	SB-2017-02-82-84	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	18		mg/L	0.5	0.5	0.2	
680-143024-1	SB-2017-02-82-84	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	1.6		mg/L	1	1	0.4	
680-143024-1	SB-2017-02-82-84	9/11/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.7		mg/L	1	0.5	0.16
680-143024-1	SB-2017-02-82-84	9/11/2017	SM 2320B	Total/NA		Alkalinity	210		mg/L	5	3.2	1.1	
680-143024-2	SB-2017-05-82-84	9/11/2017	6010C	Dissolved	7439-89-6	Iron	52,000		ug/L	50	50	17	
680-143024-2	SB-2017-05-82-84	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	3,100		ug/L	10	3	1	
680-143024-2	SB-2017-05-82-84	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	260		ug/L	3	3	1.5	
680-143024-2	SB-2017-05-82-84	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	14		mg/L	0.5	0.5	0.2	
680-143024-2	SB-2017-05-82-84	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	2.8		mg/L	1	1	0.4	
680-143024-2	SB-2017-05-82-84	9/11/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.7		mg/L	1	0.5	0.16
680-143024-2	SB-2017-05-82-84	9/11/2017	SM 2320B	Total/NA		Alkalinity	170		mg/L	5	3.2	1.1	
680-143024-3	SB-2017-02-92-94	9/11/2017	6010C	Dissolved	7439-89-6	Iron	63,000		ug/L	50	50	17	
680-143024-3	SB-2017-02-92-94	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	3,800		ug/L	10	3	1	
680-143024-3	SB-2017-02-92-94	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	1,800		ug/L	3	3	1.5	
680-143024-3	SB-2017-02-92-94	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	19		mg/L	0.5	0.5	0.2	
680-143024-3	SB-2017-02-92-94	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	1.8		mg/L	1	1	0.4	
680-143024-3	SB-2017-02-92-94	9/11/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon	3		mg/L	1	0.5	0.16
680-143024-3	SB-2017-02-92-94	9/11/2017	SM 2320B	Total/NA		Alkalinity	260		mg/L	5	3.2	1.1	
680-143024-4	SB-2017-02-102-104	9/11/2017	6010C	Dissolved	7439-89-6	Iron	65,000		ug/L	50	50	17	
680-143024-4	SB-2017-02-102-104	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	8,900		ug/L	10	3	1	
680-143024-4	SB-2017-02-102-104	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	2,400		ug/L	3	3	1.5	
680-143024-4	SB-2017-02-102-104	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	18		mg/L	0.5	0.5	0.2	
680-143024-4	SB-2017-02-102-104	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	3.2		mg/L	1	1	0.4	
680-143024-4	SB-2017-02-102-104	9/11/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.7		mg/L	1	0.5	0.16
680-143024-4	SB-2017-02-102-104	9/11/2017	SM 2320B	Total/NA		Alkalinity	280		mg/L	5	3.2	1.1	
680-143024-5	SB-2017-05-92-94	9/11/2017	6010C	Dissolved	7439-89-6	Iron	64,000		ug/L	50	50	17	
680-143024-5	SB-2017-05-92-94	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	3,600		ug/L	10	3	1	
680-143024-5	SB-2017-05-92-94	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	2,500		ug/L	3	3	1.5	
680-143024-5	SB-2017-05-92-94	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	19		mg/L	0.5	0.5	0.2	
680-143024-5	SB-2017-05-92-94	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	4.8		mg/L	1	1	0.4	
680-143024-5	SB-2017-05-92-94	9/11/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.5		mg/L	1	0.5	0.16
680-143024-5	SB-2017-05-92-94	9/11/2017	SM 2320B	Total/NA		Alkalinity	250		mg/L	5	3.2	1.1	
680-143024-6	SB-2017-02-111-113	9/11/2017	6010C	Dissolved	7439-89-6	Iron	53,000		ug/L	50	50	17	
680-143024-6	SB-2017-02-111-113	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	5,200		ug/L	10	3	1	
680-143024-6	SB-2017-02-111-113	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	800		ug/L	3	3	1.5	
680-143024-6	SB-2017-02-111-113	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	18		mg/L	0.5	0.5	0.2	
680-143024-6	SB-2017-02-111-113	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	2.2		mg/L	1	1	0.4	

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL
680-143024-6	SB-2017-02-111-113	9/11/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.6		mg/L	1	0.5	0.16
680-143024-6	SB-2017-02-111-113	9/11/2017	SM 2320B	Total/NA		Alkalinity	270		mg/L	5	3.2	1.1
680-143024-7	FD-07	9/11/2017	6010C	Dissolved	7439-89-6	Iron	76,000		ug/L	50	50	17
680-143024-7	FD-07	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	3,800		ug/L	10	3	1
680-143024-7	FD-07	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	130		ug/L	3	3	1.5
680-143024-7	FD-07	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	18		mg/L	0.5	0.5	0.2
680-143024-7	FD-07	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	1.9		mg/L	1	1	0.4
680-143024-7	FD-07	9/11/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.5		mg/L	1	0.5	0.16
680-143024-7	FD-07	9/11/2017	SM 2320B	Total/NA		Alkalinity	210		mg/L	5	3.2	1.1
680-143024-8	SB-2017-05-102-104	9/11/2017	6010C	Dissolved	7439-89-6	Iron	70,000		ug/L	50	50	17
680-143024-8	SB-2017-05-102-104	9/11/2017	6010C	Dissolved	7439-96-5	Manganese	7,500		ug/L	10	3	1
680-143024-8	SB-2017-05-102-104	9/11/2017	6020A	Dissolved	7440-38-2	Arsenic	630		ug/L	3	3	1.5
680-143024-8	SB-2017-05-102-104	9/11/2017	9056A	Total/NA	16887-00-6	Chloride	17		mg/L	0.5	0.5	0.2
680-143024-8	SB-2017-05-102-104	9/11/2017	9056A	Total/NA	14808-79-8	Sulfate	3.4		mg/L	1	1	0.4
680-143024-8	SB-2017-05-102-104	9/11/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.4		mg/L	1	0.5	0.16
680-143024-8	SB-2017-05-102-104	9/11/2017	SM 2320B	Total/NA		Alkalinity	250		mg/L	5	3.2	1.1
680-143024-9	SB-2017-17-12-14	9/12/2017	6010C	Dissolved	7439-89-6	Iron	4,800		ug/L	50	50	17
680-143024-9	SB-2017-17-12-14	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	1,600		ug/L	10	3	1
680-143024-9	SB-2017-17-12-14	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5
680-143024-9	SB-2017-17-12-14	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	13		mg/L	0.5	0.5	0.2
680-143024-9	SB-2017-17-12-14	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	8.2		mg/L	1	1	0.4
680-143024-9	SB-2017-17-12-14	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.6		mg/L	1	0.5	0.16
680-143024-9	SB-2017-17-12-14	9/12/2017	SM 2320B	Total/NA		Alkalinity	23		mg/L	5	3.2	1.1
680-143024-10	SB-2017-17-22-24	9/12/2017	6010C	Dissolved	7439-89-6	Iron	1,600		ug/L	50	50	17
680-143024-10	SB-2017-17-22-24	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	420		ug/L	10	3	1
680-143024-10	SB-2017-17-22-24	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5
680-143024-10	SB-2017-17-22-24	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	7.8		mg/L	0.5	0.5	0.2
680-143024-10	SB-2017-17-22-24	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	10		mg/L	1	1	0.4
680-143024-10	SB-2017-17-22-24	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.46 J		mg/L	1	0.5	0.16
680-143024-10	SB-2017-17-22-24	9/12/2017	SM 2320B	Total/NA		Alkalinity	35		mg/L	5	3.2	1.1
680-143024-11	SB-2017-17-32-34	9/12/2017	6010C	Dissolved	7439-89-6	Iron	2,600		ug/L	50	50	17
680-143024-11	SB-2017-17-32-34	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	660		ug/L	10	3	1
680-143024-11	SB-2017-17-32-34	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5
680-143024-11	SB-2017-17-32-34	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	420		mg/L	5	5	2
680-143024-11	SB-2017-17-32-34	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	5.6		mg/L	1	1	0.4
680-143024-11	SB-2017-17-32-34	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.71 J		mg/L	1	0.5	0.16
680-143024-11	SB-2017-17-32-34	9/12/2017	SM 2320B	Total/NA		Alkalinity	29		mg/L	5	3.2	1.1
680-143024-12	SB-2017-17-42-44	9/12/2017	6010C	Dissolved	7439-89-6	Iron	3,900		ug/L	50	50	17
680-143024-12	SB-2017-17-42-44	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	710		ug/L	10	3	1
680-143024-12	SB-2017-17-42-44	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	10		ug/L	3	3	1.5
680-143024-12	SB-2017-17-42-44	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	490		mg/L	13	13	5

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL
680-143024-12	SB-2017-17-42-44	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	12		mg/L	1	1	0.4
680-143024-12	SB-2017-17-42-44	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.91	J	mg/L	1	0.5	0.16
680-143024-12	SB-2017-17-42-44	9/12/2017	SM 2320B	Total/NA		Alkalinity	37		mg/L	5	3.2	1.1
680-143024-13	SB-2017-17-52-54	9/12/2017	6010C	Dissolved	7439-89-6	Iron	10,000		ug/L	50	50	17
680-143024-13	SB-2017-17-52-54	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	860		ug/L	10	3	1
680-143024-13	SB-2017-17-52-54	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	57		ug/L	3	3	1.5
680-143024-13	SB-2017-17-52-54	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	970		mg/L	13	13	5
680-143024-13	SB-2017-17-52-54	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	15		mg/L	1	1	0.4
680-143024-13	SB-2017-17-52-54	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.3		mg/L	1	0.5	0.16
680-143024-13	SB-2017-17-52-54	9/12/2017	SM 2320B	Total/NA		Alkalinity	54		mg/L	5	3.2	1.1
680-143024-14	SB-2017-05-112-114	9/12/2017	6010C	Dissolved	7439-89-6	Iron	34,000		ug/L	50	50	17
680-143024-14	SB-2017-05-112-114	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	12,000		ug/L	10	3	1
680-143024-14	SB-2017-05-112-114	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	1,100		ug/L	3	3	1.5
680-143024-14	SB-2017-05-112-114	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	16		mg/L	0.5	0.5	0.2
680-143024-14	SB-2017-05-112-114	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	3.5		mg/L	1	1	0.4
680-143024-14	SB-2017-05-112-114	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.4		mg/L	1	0.5	0.16
680-143024-14	SB-2017-05-112-114	9/12/2017	SM 2320B	Total/NA		Alkalinity	310		mg/L	5	3.2	1.1
680-143024-15	SB-2017-18-12-14	9/12/2017	6010C	Dissolved	7439-89-6	Iron	630		ug/L	50	50	17
680-143024-15	SB-2017-18-12-14	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	2,800		ug/L	10	3	1
680-143024-15	SB-2017-18-12-14	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5
680-143024-15	SB-2017-18-12-14	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	20		mg/L	0.5	0.5	0.2
680-143024-15	SB-2017-18-12-14	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	9.3		mg/L	1	1	0.4
680-143024-15	SB-2017-18-12-14	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.3		mg/L	1	0.5	0.16
680-143024-15	SB-2017-18-12-14	9/12/2017	SM 2320B	Total/NA		Alkalinity	15 U		mg/L	5	3.2	1.1
680-143024-16	SB-2017-18-22-24	9/12/2017	6010C	Dissolved	7439-89-6	Iron	570		ug/L	50	50	17
680-143024-16	SB-2017-18-22-24	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	1,900		ug/L	10	3	1
680-143024-16	SB-2017-18-22-24	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5
680-143024-16	SB-2017-18-22-24	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	18		mg/L	0.5	0.5	0.2
680-143024-16	SB-2017-18-22-24	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	9		mg/L	1	1	0.4
680-143024-16	SB-2017-18-22-24	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.1		mg/L	1	0.5	0.16
680-143024-16	SB-2017-18-22-24	9/12/2017	SM 2320B	Total/NA		Alkalinity	12 U		mg/L	5	3.2	1.1
680-143024-17	SB-2017-18-32-34	9/12/2017	6010C	Dissolved	7439-89-6	Iron	1,500		ug/L	50	50	17
680-143024-17	SB-2017-18-32-34	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	1,100		ug/L	10	3	1
680-143024-17	SB-2017-18-32-34	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5
680-143024-17	SB-2017-18-32-34	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	4.6		mg/L	0.5	0.5	0.2
680-143024-17	SB-2017-18-32-34	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	11		mg/L	1	1	0.4
680-143024-17	SB-2017-18-32-34	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.4 J		mg/L	1	0.5	0.16
680-143024-17	SB-2017-18-32-34	9/12/2017	SM 2320B	Total/NA		Alkalinity	27		mg/L	5	3.2	1.1
680-143024-18	SB-2017-18-42-44	9/12/2017	6010C	Dissolved	7439-89-6	Iron	930		ug/L	50	50	17
680-143024-18	SB-2017-18-42-44	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	690		ug/L	10	3	1
680-143024-18	SB-2017-18-42-44	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3 U		ug/L	3	3	1.5

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL
680-143024-18	SB-2017-18-42-44	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	3.8		mg/L	0.5	0.5	0.2
680-143024-18	SB-2017-18-42-44	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	6.7		mg/L	1	1	0.4
680-143024-18	SB-2017-18-42-44	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.94	J	mg/L	1	0.5	0.16
680-143024-18	SB-2017-18-42-44	9/12/2017	SM 2320B	Total/NA		Alkalinity	46		mg/L	5	3.2	1.1
680-143024-19	FD-08	9/12/2017	6010C	Dissolved	7439-89-6	Iron	1,100		ug/L	50	50	17
680-143024-19	FD-08	9/12/2017	6010C	Dissolved	7439-96-5	Manganese	1,100		ug/L	10	3	1
680-143024-19	FD-08	9/12/2017	6020A	Dissolved	7440-38-2	Arsenic	3	U	ug/L	3	3	1.5
680-143024-19	FD-08	9/12/2017	9056A	Total/NA	16887-00-6	Chloride	4.4		mg/L	0.5	0.5	0.2
680-143024-19	FD-08	9/12/2017	9056A	Total/NA	14808-79-8	Sulfate	11		mg/L	1	1	0.4
680-143024-19	FD-08	9/12/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.68	J	mg/L	1	0.5	0.16
680-143024-19	FD-08	9/12/2017	SM 2320B	Total/NA		Alkalinity	26		mg/L	5	3.2	1.1
680-143024-20	SB-2017-18-52-54	9/13/2017	6010C	Dissolved	7439-89-6	Iron	5,500		ug/L	50	50	17
680-143024-20	SB-2017-18-52-54	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	1,200		ug/L	10	3	1
680-143024-20	SB-2017-18-52-54	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	1.8	J	ug/L	3	3	1.5
680-143024-20	SB-2017-18-52-54	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	4.1		mg/L	0.5	0.5	0.2
680-143024-20	SB-2017-18-52-54	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	6.9		mg/L	1	1	0.4
680-143024-20	SB-2017-18-52-54	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.5		mg/L	1	0.5	0.16
680-143024-20	SB-2017-18-52-54	9/13/2017	SM 2320B	Total/NA		Alkalinity	58		mg/L	5	3.2	1.1
680-143024-21	SB-2017-17-62-64	9/13/2017	6010C	Dissolved	7439-89-6	Iron	34,000		ug/L	50	50	17
680-143024-21	SB-2017-17-62-64	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	1,500		ug/L	10	3	1
680-143024-21	SB-2017-17-62-64	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	140		ug/L	3	3	1.5
680-143024-21	SB-2017-17-62-64	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	69		mg/L	1	1	0.4
680-143024-21	SB-2017-17-62-64	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	4.3		mg/L	1	1	0.4
680-143024-21	SB-2017-17-62-64	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.3		mg/L	1	0.5	0.16
680-143024-21	SB-2017-17-62-64	9/13/2017	SM 2320B	Total/NA		Alkalinity	92		mg/L	5	3.2	1.1
680-143024-22	SB-2017-17-72-74	9/13/2017	6010C	Dissolved	7439-89-6	Iron	80,000		ug/L	50	50	17
680-143024-22	SB-2017-17-72-74	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	3,100		ug/L	10	3	1
680-143024-22	SB-2017-17-72-74	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	520		ug/L	3	3	1.5
680-143024-22	SB-2017-17-72-74	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	27		mg/L	0.5	0.5	0.2
680-143024-22	SB-2017-17-72-74	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	2.8		mg/L	1	1	0.4
680-143024-22	SB-2017-17-72-74	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.9		mg/L	1	0.5	0.16
680-143024-22	SB-2017-17-72-74	9/13/2017	SM 2320B	Total/NA		Alkalinity	190		mg/L	5	3.2	1.1
680-143024-23	SB-2017-18-62-64	9/13/2017	6010C	Dissolved	7439-89-6	Iron	45,000		ug/L	50	50	17
680-143024-23	SB-2017-18-62-64	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	1,400		ug/L	10	3	1
680-143024-23	SB-2017-18-62-64	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	200		ug/L	3	3	1.5
680-143024-23	SB-2017-18-62-64	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	21		mg/L	0.5	0.5	0.2
680-143024-23	SB-2017-18-62-64	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	2.8		mg/L	1	1	0.4
680-143024-23	SB-2017-18-62-64	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.6		mg/L	1	0.5	0.16
680-143024-23	SB-2017-18-62-64	9/13/2017	SM 2320B	Total/NA		Alkalinity	140		mg/L	5	3.2	1.1
680-143024-24	SB-2017-17-78-80	9/13/2017	6010C	Dissolved	7439-89-6	Iron	36,000		ug/L	50	50	17
680-143024-24	SB-2017-17-78-80	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	5,100		ug/L	10	3	1

Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL
680-143024-24	SB-2017-17-78-80	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	93		ug/L	3	3	1.5
680-143024-24	SB-2017-17-78-80	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	35		mg/L	0.5	0.5	0.2
680-143024-24	SB-2017-17-78-80	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	4.7		mg/L	1	1	0.4
680-143024-24	SB-2017-17-78-80	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	3.1		mg/L	1	0.5	0.16
680-143024-24	SB-2017-17-78-80	9/13/2017	SM 2320B	Total/NA		Alkalinity	310		mg/L	5	3.2	1.1
680-143024-25	SB-2017-18-72-74	9/13/2017	6010C	Dissolved	7439-89-6	Iron	44,000		ug/L	50	50	17
680-143024-25	SB-2017-18-72-74	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	1,600		ug/L	10	3	1
680-143024-25	SB-2017-18-72-74	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	250		ug/L	3	3	1.5
680-143024-25	SB-2017-18-72-74	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	17		mg/L	0.5	0.5	0.2
680-143024-25	SB-2017-18-72-74	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	4.3		mg/L	1	1	0.4
680-143024-25	SB-2017-18-72-74	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.2		mg/L	1	0.5	0.16
680-143024-25	SB-2017-18-72-74	9/13/2017	SM 2320B	Total/NA		Alkalinity	200		mg/L	5	3.2	1.1
680-143024-26	SB-2017-16-22-24	9/13/2017	6010C	Dissolved	7439-89-6	Iron	17,000		ug/L	50	50	17
680-143024-26	SB-2017-16-22-24	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	470		ug/L	10	3	1
680-143024-26	SB-2017-16-22-24	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	440		ug/L	3	3	1.5
680-143024-26	SB-2017-16-22-24	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	240		mg/L	5	5	2
680-143024-26	SB-2017-16-22-24	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	10		mg/L	1	1	0.4
680-143024-26	SB-2017-16-22-24	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.7		mg/L	1	0.5	0.16
680-143024-26	SB-2017-16-22-24	9/13/2017	SM 2320B	Total/NA		Alkalinity	75		mg/L	5	3.2	1.1

Notes:

mg/l = milligram per liter

µg/L = microgram per liter

LOQ = Limit of Quantitation

LOD = Limit of Detection

DL = Method Detection Limit

Qualified Result

Dissolved Metals
SW 846/6010C/6020A
USEPA Level II Review

Site: Former Fort Devens, MA Shepley's Hill Drilling - 2017	SDG #: 680-143134-1
Laboratory: Test America, Savannah, GA	Date: 10/02/2017
KGS Reviewer: Laurie Ekes	Project: 1081

Lab Sample ID	Client Sample ID	Date Sampled	Analysis	Matrix
680-143134-1	SB-2017-16-42-44	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-2	SB-2017-16-52-54	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-3	SB-2017-16-62-64	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-4	SB-2017-18-82-84	9/13/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-5	SB-2017-18-91-93	9/13/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-6	SB-2017-15-22-24	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-7	SB-2017-15-32-34	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-8	SB-2017-15-37-39	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-9	SB-2017-14-22-24	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-10	SB-2017-16-32-34	9/13/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-11	SB-2017-14-32-34	9/14/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-12	SB-2017-13-22-24	9/15/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-13	SB-2017-DUP-09	9/15/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-14	SB-2017-13-32-34	9/15/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-15	SB-2017-DUP-10	9/15/2017	Dissolved As, Fe, Mn	Groundwater
680-143134-16	SB-2017-13-41-43	9/15/2017	Dissolved As, Fe, Mn	Groundwater

Summary - Data validation was performed on the data for fourteen (14) groundwater profile samples and two (2) field duplicate samples collected from downgradient locations on 9/13, 9/14 and 9/15/2017 during drilling activities at Shepley's Hill. All samples were submitted for dissolved metals analyses by Method SW846/6010C for iron and manganese and Method SW846/6020A for arsenic. Samples were filtered in the field and preserved for sample shipment.

Sample Delivery and Condition – All samples arrived at the laboratory on 9/16/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented. Sample IDs were reviewed on login confirmation reports from the laboratory; any discrepancies due to illegible COCs were corrected prior to sample reporting.

Qualification: None required

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Holding Times – All samples were analyzed within the 6-month holding time required for

preserved aqueous samples.

Qualification: None required

Laboratory Control Sample – The LCS recoveries for the reported target analytes met all %R control limits.

Qualification: None required.

MS/MSD – MS/MSD samples were not submitted with this sample set. The laboratory selected sample SB-2017-16-52-54 (Lab Sample ID: 680-143134-2) and sample SB-2017-18-82-84 (Lab Sample ID: 680-143134-4) to be spiked and analyzed as batch MS/MSD. The native sample results were greater than four (4) times the spike level for all spiked analytes; %Rs could not be calculated.

Qualification: None required.

Method Blank – The method blanks prepared and analyzed with these samples were non-detect for all target analytes.

Qualification: None required.

Field Duplicate – Two field duplicate samples were submitted with this sample set. Sample SB-2017-DUP-09 (Lab Sample ID: 680-143134-13) was the field duplicate sample of SB-2017-13-22-24 (Lab Sample ID: 680-143134-12) and sample SB-2017-DUP-10 (Lab Sample ID: 680-143134-15) was the field duplicate sample of SB-2017-13-32-34 (Lab Sample ID: 680-143134-14). The results for arsenic in both FD sample pairs were non-detect. The detected results for iron and manganese were comparable with % RPDs less than 10%. The FD sample results are summarized in the table below.

Lab Sample ID	680-143134-12	680-143134-13	
Client Sample ID	SB-2017-13-22-24	SB-2017-DUP-09	
Collection Date	9/15/2017	9/15/2017	
Analyte	Result (µg/L)	Result (µg/L)	RPD (%)
Iron	120	120	0
Manganese	86	90	4.5
	680-143134-14	680-143134-15	
	SB-2017-13-32-34	SB-2017-DUP-10	
	9/15/2017	9/15/2017	
	Result (µg/L)	Result (µg/L)	RPD (%)
Iron	870	880	1.1
Manganese	160	160	0

Qualification: None required.

Compound Quantitation – Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “PQL U.” Analyte detections below the PQL were reported as J qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The dissolved metals results reported in this SDG are acceptable as reported and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value ($\mu\text{g/L}$)	Lab Qualifier	Validated Value	Validation Qualifier ($\mu\text{g/L}$)
680-143134-1	SB-2017-16-42-44	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-2	SB-2017-16-52-54	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-3	SB-2017-16-62-64	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-4	SB-2017-18-82-84	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-5	SB-2017-18-91-93	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-6	SB-2017-15-22-24	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-7	SB-2017-15-32-34	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-8	SB-2017-15-37-39	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-9	SB-2017-14-22-24	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-10	SB-2017-16-32-34	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-11	SB-2017-14-32-34	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-12	SB-2017-13-22-24	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-13	SB-2017-DUP-09	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-14	SB-2017-13-32-34	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-15	SB-2017-DUP-10	Dissolved As, Fe, Mn		No qualifications needed.		
680-143134-16	SB-2017-13-41-43	Dissolved As, Fe, Mn		No qualifications needed.		

Miscellaneous Chemistry Parameters

Alkalinity (SM2320B), Sulfate/Chloride (SW9056A), Dissolved Organic Carbon (DOC) (SW9060), and pH (SW9040C)
USEPA Level II Review

Site: Former Fort Devens, MA Shepley's Hill Drilling - 2017	SDG #: 680-143134-1
Laboratory: Test America, Savannah, GA	Date: 10/02/2017
KGS Reviewer: Laurie Ekes	Project: 1081

Lab Sample ID	Client Sample ID	Date Sampled	Analysis	Matrix
680-143134-1	SB-2017-16-42-44	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-2	SB-2017-16-52-54	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-3	SB-2017-16-62-64	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-4	SB-2017-18-82-84	9/13/2017	Miscellaneous Parameters	Groundwater
680-143134-5	SB-2017-18-91-93	9/13/2017	Miscellaneous Parameters	Groundwater
680-143134-6	SB-2017-15-22-24	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-7	SB-2017-15-32-34	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-8	SB-2017-15-37-39	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-9	SB-2017-14-22-24	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-10	SB-2017-16-32-34	9/13/2017	Miscellaneous Parameters	Groundwater
680-143134-11	SB-2017-14-32-34	9/14/2017	Miscellaneous Parameters	Groundwater
680-143134-12	SB-2017-13-22-24	9/15/2017	Miscellaneous Parameters	Groundwater
680-143134-13	SB-2017-DUP-09	9/15/2017	Miscellaneous Parameters	Groundwater
680-143134-14	SB-2017-13-32-34	9/15/2017	Miscellaneous Parameters	Groundwater
680-143134-15	SB-2017-DUP-10	9/15/2017	Miscellaneous Parameters	Groundwater
680-143134-16	SB-2017-13-41-43	9/15/2017	Miscellaneous Parameters	Groundwater

Summary - Data validation was performed on the data for fourteen (14) groundwater profile samples and two (2) field duplicate samples collected from downgradient locations on 9/13, 9/14 and 9/15/2017 during drilling activities at Shepley's Hill. All samples were submitted for the miscellaneous wet chemistry analyses listed above. Four samples were analyzed at the laboratory for pH to confirm erroneous field readings. Samples submitted for dissolved organic carbon (DOC) analyses were field filtered. The samples submitted for alkalinity and DOC analyses were shipped to Test America Denver for analysis.

Sample Delivery and Condition – All samples arrived at the laboratory on 9/16/2017 in acceptable condition and temperature and were properly preserved. Proper custody was documented. Sample IDs were reviewed on login confirmation reports from the laboratory; any discrepancies due to illegible COCs were corrected prior to sample reporting.

Qualification: None required.

Narrative and Completeness Review – The case narrative and data package were checked for completeness. No discrepancies were noted.

Qualification: None required.

Holding Times – All samples were analyzed within the respective holding times required for preserved aqueous samples.

Qualification: None required.

Method Blank –The method blanks for DOC, chloride and sulfate were free from contamination. Low level contamination was detected in the method blanks prepared and analyzed for alkalinity at 2.72 and 3.2 mg/L. The alkalinity results for the majority of samples were greater than ten times the blank levels.

Qualification: The low-level results for alkalinity (12 mg/L and 13 mg/L) less than ten times the blank levels were qualified as non-detect in samples SB-2017-13-32-34 and SB-2017-DUP-10 (Lab Sample IDs: 680-143134-14 and -15) were qualified as non-detect.

Laboratory Control Sample – The LCS %R results for all methods associated with these samples met the control limits.

Qualification: None required.

MS/MSD – MS/MSD samples were not submitted with this sample set. Batch MS/MSD samples prepared and reported with this sample set were within control limits.

Qualification: None required.

Field Duplicate – Two field duplicate samples were submitted with this sample set. Sample SB-2017-DUP-09 (Lab Sample ID: 680-143134-13) was the field duplicate sample of SB-2017-13-22-24 (Lab Sample ID: 680-143134-12) and sample SB-2017-DUP-10 (Lab Sample ID: 680-143134-15) was the field duplicate sample of SB-2017-13-32-34 (Lab Sample ID: 680-143134-14). Detected results were comparable for all analytes with RPDs less than 20% with the exception of DOC in the FD sample pair SB-2017-13-22-24/SB-2017-DUP-09, which had an RPD of 62%. This discrepancy is likely due to the low level DOC results. FD sample results are summarized in the table below.

Lab Sample ID	680-143134-12	680-143134-13	
Client Sample ID	SB-2017-13-22-24	SB-2017-DUP-09	
Collection Date	9/15/2017	9/15/2017	
Analyte	Result (mg/L)	Result (mg/L)	RPD (%)
Chloride	130	130	0
Sulfate	9.9	9.8	1.0
DOC	0.58	1.1	62
Alkalinity	24	23	4.3
	680-143134-14	680-143134-15	
	SB-2017-13-32-34	SB-2017-DUP-10	
	9/15/2017	9/15/2017	
	Result (mg/L)	Result (mg/L)	RPD (%)
Chloride	340	340	0
Sulfate	5.3	5.2	1.9
DOC	0.50	0.49	2

Qualification: The DOC results in the FD sample pair SB-2017-13-22-24 and SB-2017-DUP-09 were qualified as estimated (J).

Compound Quantitation – Analyte non-detections were reported as “ND”; these results should be considered the equivalent of “LOQ U.” Analyte detections below the LOQ were reported as J-qualified results. These J qualifiers were retained unless superseded by a more severe qualifier.

Qualification: None required.

Qualification Summary Table - The miscellaneous parameter results reported in this SDG are acceptable with the noted qualifications and the data may be used for its intended purpose.

Lab Sample ID	Client Sample ID	Analysis	Lab Value (mg/L)	Lab Qualifier	Validated Value	Validation Qualifier (mg/L)
680-143134-1	SB-2017-16-42-44	Miscellaneous Parameters	No qualifications needed.			
680-143134-2	SB-2017-16-52-54	Miscellaneous Parameters	No qualifications needed.			
680-143134-3	SB-2017-16-62-64	Miscellaneous Parameters	No qualifications needed.			
680-143134-4	SB-2017-18-82-84	Miscellaneous Parameters	No qualifications needed.			
680-143134-5	SB-2017-18-91-93	Miscellaneous Parameters	No qualifications needed.			
680-143134-6	SB-2017-15-22-24	Miscellaneous Parameters	No qualifications needed.			
680-143134-7	SB-2017-15-32-34	Miscellaneous Parameters	No qualifications needed.			
680-143134-8	SB-2017-15-37-39	Miscellaneous Parameters	No qualifications needed.			
680-143134-9	SB-2017-14-22-24	Miscellaneous Parameters	No qualifications needed.			
680-143134-10	SB-2017-16-32-34	Miscellaneous Parameters	No qualifications needed.			
680-143134-11	SB-2017-14-32-34	Miscellaneous Parameters	No qualifications needed.			
680-143134-12	SB-2017-13-22-24	DOC	0.58	J	0.58	J
680-143134-13	SB-2017-DUP-09	DOC	1.1		1.1	J
680-143134-14	SB-2017-13-32-34	Alkalinity	12	B	12	U
680-143134-15	SB-2017-DUP-10	Alkalinity	13	B	13	U
680-143134-16	SB-2017-13-41-43	Miscellaneous Parameters	No qualifications needed.			

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL
680-143134-1	SB-2017-16-42-44	9/14/2017	6010C	Dissolved	7439-89-6	Iron	32,000		ug/L	50	50	17
680-143134-1	SB-2017-16-42-44	9/14/2017	6010C	Dissolved	7439-96-5	Manganese	980		ug/L	10	3	1
680-143134-1	SB-2017-16-42-44	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic	420		ug/L	3	3	1.5
680-143134-1	SB-2017-16-42-44	9/14/2017	9040C	NA		pH	7.2	SU				
680-143134-1	SB-2017-16-42-44	9/14/2017	9056A	Total/NA	16887-00-6	Chloride	4.7		mg/L	0.5	0.5	0.2
680-143134-1	SB-2017-16-42-44	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate	3.4		mg/L	1	1	0.4
680-143134-1	SB-2017-16-42-44	9/14/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.7		mg/L	1	0.5	0.16
680-143134-1	SB-2017-16-42-44	9/14/2017	SM 2320B	Total/NA		Alkalinity	91		mg/L	5	3.2	1.1
680-143134-2	SB-2017-16-52-54	9/14/2017	6010C	Dissolved	7439-89-6	Iron	41,000		ug/L	50	50	17
680-143134-2	SB-2017-16-52-54	9/14/2017	6010C	Dissolved	7439-96-5	Manganese	1,400		ug/L	10	3	1
680-143134-2	SB-2017-16-52-54	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic	1,300		ug/L	3	3	1.5
680-143134-2	SB-2017-16-52-54	9/14/2017	9040C	NA		pH	7.3	SU				
680-143134-2	SB-2017-16-52-54	9/14/2017	9056A	Total/NA	16887-00-6	Chloride	15		mg/L	0.5	0.5	0.2
680-143134-2	SB-2017-16-52-54	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate	2.8		mg/L	1	1	0.4
680-143134-2	SB-2017-16-52-54	9/14/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	2.1		mg/L	1	0.5	0.16
680-143134-2	SB-2017-16-52-54	9/14/2017	SM 2320B	Total/NA		Alkalinity	190		mg/L	5	3.2	1.1
680-143134-3	SB-2017-16-62-64	9/14/2017	6010C	Dissolved	7439-89-6	Iron	5,300		ug/L	50	50	17
680-143134-3	SB-2017-16-62-64	9/14/2017	6010C	Dissolved	7439-96-5	Manganese	7,300		ug/L	10	3	1
680-143134-3	SB-2017-16-62-64	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic	1.7	J	ug/L	3	3	1.5
680-143134-3	SB-2017-16-62-64	9/14/2017	9040C	NA		pH	7.7	SU				
680-143134-3	SB-2017-16-62-64	9/14/2017	9056A	Total/NA	16887-00-6	Chloride	140		mg/L	2	2	0.8
680-143134-3	SB-2017-16-62-64	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate	4.0		mg/L	1	1	0.4
680-143134-3	SB-2017-16-62-64	9/14/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	3.1		mg/L	1	0.5	0.16
680-143134-3	SB-2017-16-62-64	9/14/2017	SM 2320B	Total/NA		Alkalinity	380		mg/L	5	3.2	1.1
680-143134-4	SB-2017-18-82-84	9/13/2017	6010C	Dissolved	7439-89-6	Iron	41,000		ug/L	50	50	17
680-143134-4	SB-2017-18-82-84	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	7,600		ug/L	10	3	1
680-143134-4	SB-2017-18-82-84	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	94		ug/L	3	3	1.5
680-143134-4	SB-2017-18-82-84	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	22		mg/L	0.5	0.5	0.2
680-143134-4	SB-2017-18-82-84	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	2.4		mg/L	1	1	0.4
680-143134-4	SB-2017-18-82-84	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	3		mg/L	1	0.5	0.16
680-143134-4	SB-2017-18-82-84	9/13/2017	SM 2320B	Total/NA		Alkalinity	290		mg/L	5	3.2	1.1
680-143134-5	SB-2017-18-91-93	9/13/2017	6010C	Dissolved	7439-89-6	Iron	15,000		ug/L	50	50	17
680-143134-5	SB-2017-18-91-93	9/13/2017	6010C	Dissolved	7439-96-5	Manganese	4,100		ug/L	10	3	1
680-143134-5	SB-2017-18-91-93	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic	1.7	J	ug/L	3	3	1.5
680-143134-5	SB-2017-18-91-93	9/13/2017	9056A	Total/NA	16887-00-6	Chloride	40		mg/L	0.5	0.5	0.2
680-143134-5	SB-2017-18-91-93	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate	7.5		mg/L	1	1	0.4
680-143134-5	SB-2017-18-91-93	9/13/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	3.5		mg/L	1	0.5	0.16
680-143134-5	SB-2017-18-91-93	9/13/2017	SM 2320B	Total/NA		Alkalinity	420		mg/L	5	3.2	1.1
680-143134-6	SB-2017-15-22-24	9/14/2017	6010C	Dissolved	7439-89-6	Iron	29,000		ug/L	50	50	17
680-143134-6	SB-2017-15-22-24	9/14/2017	6010C	Dissolved	7439-96-5	Manganese	4,800		ug/L	10	3	1
680-143134-6	SB-2017-15-22-24	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic	550		ug/L	3	3	1.5
680-143134-6	SB-2017-15-22-24	9/14/2017	9056A	Total/NA	16887-00-6	Chloride	85		mg/L	1	1	0.4
680-143134-6	SB-2017-15-22-24	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate	8.6		mg/L	1	1	0.4

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL	
680-143134-6	SB-2017-15-22-24	9/14/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon		1.1	mg/L	1	0.5	0.16
680-143134-6	SB-2017-15-22-24	9/14/2017	SM 2320B	Total/NA			Alkalinity		51	mg/L	5	3.2	1.1
680-143134-7	SB-2017-15-32-34	9/14/2017	6010C	Dissolved	7439-89-6	Iron		31,000	ug/L	50	50	17	
680-143134-7	SB-2017-15-32-34	9/14/2017	6010C	Dissolved	7439-96-5	Manganese		850	ug/L	10	3	1	
680-143134-7	SB-2017-15-32-34	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic		1,300	ug/L	3	3	1.5	
680-143134-7	SB-2017-15-32-34	9/14/2017	9056A	Total/NA	16887-00-6	Chloride		12	mg/L	0.5	0.5	0.2	
680-143134-7	SB-2017-15-32-34	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate		3.5	mg/L	1	1	0.4	
680-143134-7	SB-2017-15-32-34	9/14/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon		1.8	mg/L	1	0.5	0.16
680-143134-7	SB-2017-15-32-34	9/14/2017	SM 2320B	Total/NA			Alkalinity		84	mg/L	5	3.2	1.1
680-143134-8	SB-2017-15-37-39	9/14/2017	6010C	Dissolved	7439-89-6	Iron		53,000	ug/L	50	50	17	
680-143134-8	SB-2017-15-37-39	9/14/2017	6010C	Dissolved	7439-96-5	Manganese		1,500	ug/L	10	3	1	
680-143134-8	SB-2017-15-37-39	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic		2,100	ug/L	3	3	1.5	
680-143134-8	SB-2017-15-37-39	9/14/2017	9056A	Total/NA	16887-00-6	Chloride		17	mg/L	0.5	0.5	0.2	
680-143134-8	SB-2017-15-37-39	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate		2.5	mg/L	1	1	0.4	
680-143134-8	SB-2017-15-37-39	9/14/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon		3.3	mg/L	1	0.5	0.16
680-143134-8	SB-2017-15-37-39	9/14/2017	SM 2320B	Total/NA			Alkalinity		210	mg/L	5	3.2	1.1
680-143134-9	SB-2017-14-22-24	9/14/2017	6010C	Dissolved	7439-89-6	Iron		28,000	ug/L	50	50	17	
680-143134-9	SB-2017-14-22-24	9/14/2017	6010C	Dissolved	7439-96-5	Manganese		1,500	ug/L	10	3	1	
680-143134-9	SB-2017-14-22-24	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic		2,000	ug/L	3	3	1.5	
680-143134-9	SB-2017-14-22-24	9/14/2017	9056A	Total/NA	16887-00-6	Chloride		39	mg/L	0.5	0.5	0.2	
680-143134-9	SB-2017-14-22-24	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate		3.1	mg/L	1	1	0.4	
680-143134-9	SB-2017-14-22-24	9/14/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon		2.0	mg/L	1	0.5	0.16
680-143134-9	SB-2017-14-22-24	9/14/2017	SM 2320B	Total/NA			Alkalinity		44	mg/L	5	3.2	1.1
680-143134-10	SB-2017-16-32-34	9/13/2017	6010C	Dissolved	7439-89-6	Iron		3,500	ug/L	50	50	17	
680-143134-10	SB-2017-16-32-34	9/13/2017	6010C	Dissolved	7439-96-5	Manganese		570	ug/L	10	3	1	
680-143134-10	SB-2017-16-32-34	9/13/2017	6020A	Dissolved	7440-38-2	Arsenic		260	ug/L	3	3	1.5	
680-143134-10	SB-2017-16-32-34	9/13/2017	9040C	NA		pH		7.9	SU				
680-143134-10	SB-2017-16-32-34	9/13/2017	9056A	Total/NA	16887-00-6	Chloride		76	mg/L	1	1	0.4	
680-143134-10	SB-2017-16-32-34	9/13/2017	9056A	Total/NA	14808-79-8	Sulfate		2.5	mg/L	1	1	0.4	
680-143134-10	SB-2017-16-32-34	9/13/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon		3.4	mg/L	1	0.5	0.16
680-143134-10	SB-2017-16-32-34	9/13/2017	SM 2320B	Total/NA			Alkalinity		86	mg/L	5	3.2	1.1
680-143134-11	SB-2017-14-32-34	9/14/2017	6010C	Dissolved	7439-89-6	Iron		5,500	ug/L	50	50	17	
680-143134-11	SB-2017-14-32-34	9/14/2017	6010C	Dissolved	7439-96-5	Manganese		1,700	ug/L	10	3	1	
680-143134-11	SB-2017-14-32-34	9/14/2017	6020A	Dissolved	7440-38-2	Arsenic		490	ug/L	3	3	1.5	
680-143134-11	SB-2017-14-32-34	9/14/2017	9056A	Total/NA	16887-00-6	Chloride		4.7	mg/L	0.5	0.5	0.2	
680-143134-11	SB-2017-14-32-34	9/14/2017	9056A	Total/NA	14808-79-8	Sulfate		3.6	mg/L	1	1	0.4	
680-143134-11	SB-2017-14-32-34	9/14/2017		9060	Dissolved	7440-44-0	Dissolved Organic Carbon		1.6	mg/L	1	0.5	0.16
680-143134-11	SB-2017-14-32-34	9/14/2017	SM 2320B	Total/NA			Alkalinity		43	mg/L	5	3.2	1.1
680-143134-12	SB-2017-13-22-24	9/15/2017	6010C	Dissolved	7439-89-6	Iron		120	ug/L	50	50	17	
680-143134-12	SB-2017-13-22-24	9/15/2017	6010C	Dissolved	7439-96-5	Manganese		86	ug/L	10	3	1	
680-143134-12	SB-2017-13-22-24	9/15/2017	6020A	Dissolved	7440-38-2	Arsenic		1.5 J	ug/L	3	3	1.5	
680-143134-12	SB-2017-13-22-24	9/15/2017	9056A	Total/NA	16887-00-6	Chloride		130	mg/L	2	2	0.8	
680-143134-12	SB-2017-13-22-24	9/15/2017	9056A	Total/NA	14808-79-8	Sulfate		9.9	mg/L	1	1	0.4	

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Lab Sample ID	Client Sample ID	Collection Date	Analysis Method	Prep Type	CAS	Analyte	Result	Flag	Unit	LOQ	LOD	DL
680-143134-12	SB-2017-13-22-24	9/15/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.58	J	mg/L	1	0.5	0.16
680-143134-12	SB-2017-13-22-24	9/15/2017	SM 2320B	Total/NA		Alkalinity	24		mg/L	5	3.2	1.1
680-143134-13	SB-2017-DUP-09	9/15/2017	6010C	Dissolved	7439-89-6	Iron	120		ug/L	50	50	17
680-143134-13	SB-2017-DUP-09	9/15/2017	6010C	Dissolved	7439-96-5	Manganese	90		ug/L	10	3	1
680-143134-13	SB-2017-DUP-09	9/15/2017	6020A	Dissolved	7440-38-2	Arsenic	3.0	U	ug/L	3	3	1.5
680-143134-13	SB-2017-DUP-09	9/15/2017	9056A	Total/NA	16887-00-6	Chloride	130		mg/L	2	2	0.8
680-143134-13	SB-2017-DUP-09	9/15/2017	9056A	Total/NA	14808-79-8	Sulfate	9.8		mg/L	1	1	0.4
680-143134-13	SB-2017-DUP-09	9/15/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	1.1	J	mg/L	1	0.5	0.16
680-143134-13	SB-2017-DUP-09	9/15/2017	SM 2320B	Total/NA		Alkalinity	23		mg/L	5	3.2	1.1
680-143134-14	SB-2017-13-32-34	9/15/2017	6010C	Dissolved	7439-89-6	Iron	870		ug/L	50	50	17
680-143134-14	SB-2017-13-32-34	9/15/2017	6010C	Dissolved	7439-96-5	Manganese	160		ug/L	10	3	1
680-143134-14	SB-2017-13-32-34	9/15/2017	6020A	Dissolved	7440-38-2	Arsenic	3.0	U	ug/L	3	3	1.5
680-143134-14	SB-2017-13-32-34	9/15/2017	9056A	Total/NA	16887-00-6	Chloride	340		mg/L	5	5	2
680-143134-14	SB-2017-13-32-34	9/15/2017	9056A	Total/NA	14808-79-8	Sulfate	5.3		mg/L	1	1	0.4
680-143134-14	SB-2017-13-32-34	9/15/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.50	J	mg/L	1	0.5	0.16
680-143134-14	SB-2017-13-32-34	9/15/2017	SM 2320B	Total/NA		Alkalinity	12	U	mg/L	5	3.2	1.1
680-143134-15	SB-2017-DUP-10	9/15/2017	6010C	Dissolved	7439-89-6	Iron	880		ug/L	50	50	17
680-143134-15	SB-2017-DUP-10	9/15/2017	6010C	Dissolved	7439-96-5	Manganese	160		ug/L	10	3	1
680-143134-15	SB-2017-DUP-10	9/15/2017	6020A	Dissolved	7440-38-2	Arsenic	3.0	U	ug/L	3	3	1.5
680-143134-15	SB-2017-DUP-10	9/15/2017	9056A	Total/NA	16887-00-6	Chloride	340		mg/L	5	5	2
680-143134-15	SB-2017-DUP-10	9/15/2017	9056A	Total/NA	14808-79-8	Sulfate	5.2		mg/L	1	1	0.4
680-143134-15	SB-2017-DUP-10	9/15/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.49	J	mg/L	1	0.5	0.16
680-143134-15	SB-2017-DUP-10	9/15/2017	SM 2320B	Total/NA		Alkalinity	13	U	mg/L	5	3.2	1.1
680-143134-16	SB-2017-13-41-43	9/15/2017	6010C	Dissolved	7439-89-6	Iron	3,700		ug/L	50	50	17
680-143134-16	SB-2017-13-41-43	9/15/2017	6010C	Dissolved	7439-96-5	Manganese	1,100		ug/L	10	3	1
680-143134-16	SB-2017-13-41-43	9/15/2017	6020A	Dissolved	7440-38-2	Arsenic	3.7		ug/L	3	3	1.5
680-143134-16	SB-2017-13-41-43	9/15/2017	9056A	Total/NA	16887-00-6	Chloride	6.5		mg/L	0.5	0.5	0.2
680-143134-16	SB-2017-13-41-43	9/15/2017	9056A	Total/NA	14808-79-8	Sulfate	2.7		mg/L	1	1	0.4
680-143134-16	SB-2017-13-41-43	9/15/2017	9060	Dissolved	7440-44-0	Dissolved Organic Carbon	0.64	J	mg/L	1	0.5	0.16
680-143134-16	SB-2017-13-41-43	9/15/2017	SM 2320B	Total/NA		Alkalinity	24		mg/L	5	3.2	1.1

Notes:

Qualified Result

mg/l = milligram per liter

ug/L = microgram per liter

LOQ = Limit of Quantitation

LOD = Limit of Detection

DL = Method Detection Limit

ATTACHMENT 4
Responses to Comments

**ARMY RESPONSES TO EPA COMMENTS ON
THE DRAFT TECHNICAL MEMORANDUM
DEMONSTRATE PLUME CAPTURE – DOWNGRADIENT DELINEATION
EPA SOW PHASE 1, TASK 3 – SHEPLEY’S HILL LANDFILL
FORMER FORT DEVENS ARMY INSTALLATION, MASSACHUSETTS
MARCH 2018**

The following Army responses pertain to the U.S. Environmental Protection Agency (EPA) comments dated 8 February 2018 on the *Draft Technical Memorandum to Demonstrate Plume Capture – Downgradient Delineation, EPA SOW Phase I Task 3*, dated November 2017.

GENERAL COMMENTS

1. As discussed during the January 18, 2018 Devens BCT meeting, to ensure compliance with the Additional Work requirements set forth in Phase 1 Task 3, Subtask d., EPA requests that Army provide a map illustrating the vertical and horizontal extent of the arsenic plume along Sculley Road. While Figures 5 and 6 provide an overhead view of boring locations with corresponding groundwater profile data and a cross-section view of groundwater profile results for arsenic, Iron and DOC collected during the 2017 field effort, a map illustrating the vertical and horizontal extent of arsenic concentrations in the downgradient portion of the SHL plume using data collected as part of the Phase 1 Task 3 field effort and any other relevant long-term monitoring data was not included in the draft Phase 1 Task 3 Technical Memorandum. In addition, the map showing the extent of contamination should include monitoring wells SHM-99-31A/B/C and SHM-99-32X to the east and SHM-07-03 to the west and be contoured, vertically and horizontally, at the 150 ug/L dissolved arsenic concentration (the “action level” established in the August 2017 Final SHL Supplemental Investigation Work Plan for delineation of the western extent of the arsenic plume upgradient of the extraction wells (Phase 1 Task 2)).

Attached is an example from the Sept 2015 LTMMP that illustrates outlining an area within the aquifer that exceeds a specific arsenic concentration (filtered). While the data used to generate the figure should be amended to illustrate the specific information required in Phase 1 Task 3, the example shows how the horizontal extent of arsenic concentrations (> 150 ppb) should be presented.

Response: The Figure 5 plan view map will be supplemented with an additional figure (new Figure 6) showing an interpreted arsenic plume with concentration variations based on the Phase 1 Task 3 analytical results. The new figure will extend the Sculley Road transect data to include dissolved arsenic results previously detected in the North Impact Area (NIA), including wells SHM-99-31A/B/C, SHM-99-32X, and SHM-07-03.

The draft Figure 6 cross section will be renamed Figure 7 in the revised Technical Memorandum and will also be supplemented with an additional figure (new Figure 8) showing an interpreted arsenic plume with concentration variations based on the Phase 1 Task 3 analytical results. The new Figure 8 will show the 150 µg/L concentration contour and will extend the Sculley Road transect to include dissolved arsenic results previously detected in wells SHM-99-31A/B/C, SHM-99-32X, and SHM-07-03.

2. Although Phase 1 Task 3 Subtask e. states that permanent monitoring well locations will be identified based on the results of Phase 1 Task 3 activities, EPA has decided to postpone a

decision regarding additional well locations along Sculley Road, pending results of additional Phase 1 activities.

Response: Comment noted.

PAGE-SPECIFIC COMMENTS

1. Page 1, Section 1.0, Introduction, ¶ 1 – Please change “the environmental investigation” in the first sentence to “results of Additional Work”.

Response: The text will be revised as requested.

2. Page 1, Section 1.0, Introduction, ¶ 2 – Please delete the current text and replace it with the following: “The November 2017 Phase 1 Task 3 Technical Memorandum is provided to replace the December 2016 Phase 1 Task 3 Technical Memorandum disapproved by EPA on February 10, 2017.” Please note: The February 24, 2016 SHL SOW did not require that Additional Work, necessary to determine whether the SHL remedial action is protective of human health and the environment, be conducted in accordance with the “Final Work Plan SHL Supplemental Investigation to Demonstrate Plume Capture (KGS, 2017)” as stated in the Army’s proposed text.

Response: The text will be revised as requested.

3. Page 2, Section 1.0, Introduction, b. EPA Scope of Work, ¶1, 1st and 2nd sentences – Please delete the current text and replace it with the following: “The November 2017 Phase 1 Task 3 Technical Memorandum summarizes results of the Additional Work performed by Army per requirements set forth in EPA’s February 24, 2016 SHL SOW. Specifically, Phase 1 identified five tasks and associated subtasks necessary to assess whether the existing arsenic extraction and treatment system as designed, constructed and operated provides sufficient containment/capture of the contamination migrating from SHL. Task 3 identified the Additional Work required to delineate the lateral and vertical extent of contamination downgradient along Sculley Road.”

Response: The text will be revised as requested.

4. Page 3, Section 2.0, b. Groundwater Sample Collection Procedure - The second paragraph for this section includes the statement, “Additional filters of 1-, 5- and 10-microns were added as needed to achieve low-low parameter stability for turbidity”. The use of pre-filters for sampling groundwater from temporary screens is to prevent fouling of electrodes in the flow cell (dissolved oxygen, temperature, pH, oxidation-reduction potential, specific conductance) that are used to monitor and establish achievement of stable conditions prior to sample collection. The turbidity of groundwater sampled from temporary well screens is much higher than what is typically encountered during sampling from developed, permanent monitor wells or piezometers. Based on the foregoing, EPA requests that the current statement be replaced with the following, “Combinations of in-line filters (1-, 5-, 10-micron pore size) were attached to the outlet of the sample tubing prior to connection to the flow cell in order to avoid damage to the flow cell electrodes from the high levels of turbidity typically encountered during sampling from temporary profile screens.”

Response: Section 2.0 b, second paragraph, second sentence will be revised as requested.

5. Page 7, Section 3.0, Groundwater Profiling Results, ¶ 1 – Consistent with Army's response to EPA general comment #1 on the draft SHL SI Work Plan, please change "dissolved arsenic" to "arsenic contamination."

Response: The text will be revised as requested.

6. Page 7, Section 3.0, Groundwater Profiling Results – The latitude, longitude, and elevation of groundwater profiling locations are shown in Figures 5 and 6. Based on the approved Final Work Plan (KGS, 2017), the locations of 2017 borings were to be placed within 10 feet of the former 2016 boring locations. Since the current draft report does not document whether the 2017 boring locations were surveyed during the field effort, it is assumed that the latitude, longitude, and ground surface elevations used to generate Figures 5 and 6 are based on the survey data for the 2016 locations (see attached Figure A). Please use the survey data for the former 2016 boring locations as reported in the 2017 Shepley's Hill Landfill, Devens, Massachusetts, Monitor Well Survey (WSP, 2017) to check and revise the accuracy of x, y, and z information conveyed in Figure 5, Figure 6, and the discussion within Section 3.0. In particular, it appears that the locations of borings SB-2017-17 and SB-2017-18 presented in Figures 5 and 6 of the current draft report are in error. The SB-2017-17 boring location appears to have been placed on the right-of-way immediately adjacent and south of Sculley Road, whereas the location of the former 2016 boring was previously in the depression further south of the right-of-way (compare attached Figure A and draft report Figure 5). If the horizontal and vertical locations presented in Figures 5 and 6 accurately reflect the locations of SB-2017-17 and SB-2017-18, please add a paragraph in Section 3.0 that provides a qualitative description of the locations of these two borings and how they differ from the locations of the former 2016 borings.

Response: The 2017 soil boring locations shown on draft Figures 5 and 6 were located using a hand-held GPS Trimble instrument for recording coordinates. The draft Figures 4, 5, and 6 will be updated using the 2017 location and elevation survey data for the 2016 boring coordinates. The 2017 boring locations were within 10 feet of the 2016 boring locations, except for SB-17-17 and SB-17-18. These two borings were located in close proximity to 2016 soil borings, but the actual placement was adjusted due to trees and vegetation coverage in the wetland and due to accessibility for the drill rig. The draft Figures 5 and 6 will be revised to show SB-17-17 moved from Molumco Road (eastern extension of Sculley Road) to the southwest near SB-16-17. SB-17-18 will be moved slightly east of current location on Figure 5. Section 2.a will be revised to note that the locations of SB-17-17 and SB-17-18 were adjusted slightly based on field conditions.

7. Figures – See General Comment 1. above.

Response: See the response to General Comment 1.

**U.S. ARMY RESPONSES TO USEPA ADDITIONAL COMMENTS ON THE
DRAFT TECHNICAL MEMORANDUM
DEMONSTRATE PLUME CAPTURE – DOWNGRADIENT DELINEATION
EPA SOW PHASE 1, TASK 3 – SHEPLEY’S HILL LANDFILL
FORMER FORT DEVENS ARMY INSTALLATION, MASSACHUSETTS**

June 2018

The following Army responses pertain to the U.S. Environmental Protection Agency (EPA) comments received on 1 May 2018 on the *Draft Technical Memorandum to Demonstrate Plume Capture – Downgradient Delineation, EPA SOW Phase I Task 3*, dated November 2017.

Comment 1, Figure 6 – Arsenic concentrations are shown for monitoring well locations within the North Impact Area (NIA). Supporting text within Section 3 indicates that the data associated with these monitoring wells were derived from sampling performed in “spring 2016”. One location, SHM-07-05X shows an arsenic concentration of 890 microgram/liter but data reported in Table 5-6 of the “2016 Annual Operations, Maintenance, and Monitoring Report” (2016 Annual Report) reports sample data from October 2007 (14.7 microgram/liter (total)), June 2015 (4.8 microgram/liter (dissolved)), and June 2016 (11 microgram/liter (dissolved)). In addition, one or more of the arsenic concentrations reported in the Figure 6 appear to be from sampling performed in 2017. For example, on Figure 5 the spring 2016 dissolved arsenic concentration for monitoring well SHM-05-40X is shown as 2,800 micrograms/liter but shown as 2,200 micrograms/liter on Figure 6 (which appears to be fall 2017 data). Please revise the text in Section 3 to reference the correct sources of arsenic concentration data posted in Figures 5 and Figure 6. For consistency with existing Figure 5, it is recommended that arsenic concentration data posted in Figure 6 reflect data reported for 2016 monitoring events. Alternatively, Figure 5 and Figure 6 can be revised to consistently report validated 2017 data, and the correspondence for which validated arsenic concentration data from 2017 have been shared with the EPA and MADEP should be cited within the references section.

Response: **Figures 5 and 6 have been revised to show validated 2017 data, where available. At locations where no 2017 data are available, the most recent historical data were used in order to help define the horizontal extent of arsenic in the NIA. The data sources are noted on the figures and in the Memorandum text. The 2017 data have been cited within the reference section of the Memorandum.**

Comment 2, Figures 7 and 8 – Cross-sections of monitor well and vertical profile locations are presented. As discussed above, arsenic concentration data posted for existing monitoring wells should be clearly referenced to either the 2016 or 2017 data source. In addition, the ground surface elevation at locations SB-17-17 and SB-17-18 should be revised to reflect the surveyed elevations in the WSP 2017 Well Report for locations SB-16-17 (214.03 ft msl NAVD 1988) and SB-16-18 (212.37 ft msl NAVD 1988). Please note that boring location SB-17-18 is approximately 50-feet west of existing monitor well location SHM-99-31A with a reported ground surface elevation of 212.82 ft msl NAVD 1988. Accordingly, the interpreted top of bedrock and contoured arsenic concentration distribution should be revised to account for the corrected elevation data at boring locations SB-17-17 and SB-17-18.

Response: Figures 7 and 8 have been revised to show validated 2017 LTM data. Data sources are noted on the figures and in the Memorandum text and references. At locations where no 2017 data are available, the most recent historical data were used in order to help define the vertical extent of arsenic along the downgradient transect. Figures 7 and 8 have been updated to show new ground elevation data from the 2017 survey report at SB-17-17 and SB-17-18 using corresponding survey data of SB-16-17 and SB-16-18, respectively. The interpretive bedrock surface and interpretive arsenic concentration contours have been adjusted on Figure 8 based on updated ground elevation data from the 2017 survey report.