

United States Army Corps of Engineers
New England District

Final

2020 Annual Operations,

Maintenance, and Monitoring

Report

Shepley's Hill Landfill
Former Fort Devens Army Installation
Devens, Massachusetts

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Final 2020 Annual Operations, Maintenance, and Monitoring Report

**Shepley's Hill Landfill
Former Fort Devens Army Installation
Devens, Massachusetts**

August 2021

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CERTIFICATION

I hereby certify that the enclosed Report, shown and marked in this submittal, is that proposed to be incorporated with Contract Number W912WJ-19-D-0014. This document was prepared in accordance with the U.S. Army Corps of Engineers (USACE) Scope of Work and is hereby submitted for Government approval.

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Acronyms and Abbreviations

µg/L	microgram per liter
%	percent
AOC	area of contamination
ATP	arsenic treatment plant
CIP	clean-in-place
CL	cleanup level
COC	contaminant of concern
Devens	former Fort Devens Army Installation
DO	dissolved oxygen
DoD	Department of Defense
Eurofins	Eurofins TestAmerica Laboratories
FBRO	filter bed roll-off
ft	foot or feet
ft/ft	feet per foot
gpm	gallon per minute
IC	institutional control
KGS	KOMAN Government Solutions, LLC
LEL	lower explosive limit
LGP	landfill gas point
LTM	long-term monitoring
LTMP	Long-Term Monitoring and Maintenance Plan
LUC	land use control
LUCIP	Land Use Control Implementation Plan
MassDEP	Massachusetts Department of Environmental Protection
MassDevelopment	Massachusetts Development and Finance Agency
MCL	maximum contaminant level
MF	microfiltration
mg/L	milligram per liter
MS	matrix spike
MSD	matrix spike duplicate

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mV	millivolt
NAVD	North American Vertical Datum
NIA	North Impact Area
O&M	operation and maintenance
ORP	oxidation-reduction potential
ppm	part per million
QAPP	Quality Assurance Project Plan
QC	quality control
redox	oxidation-reduction
RI	remedial investigation
ROD	Record of Decision
S-A JV	SERES-Arcadis 8(a) Joint Venture 2, LLC
SHL	Shepley's Hill Landfill
Sovereign	Sovereign Consulting, Inc.
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

1 Introduction

SERES-Arcadis 8(a) Joint Venture 2, LLC (S-A JV) prepared this Annual Operations, Maintenance, and Monitoring Report to summarize the long-term monitoring (LTM) program and operation and maintenance (O&M) activities conducted during 2020 at the Shepley's Hill Landfill (SHL) site, located at the former Fort Devens Army Installation (Devens) in Devens, Massachusetts (Figure 1). LTM and O&M activities were conducted in accordance with the Final Long-Term Monitoring and Maintenance Plan (LTMMP) Update (Sovereign Consulting, Inc. [Sovereign] 2015), the 2018 LTMMP Addendum (KOMAN Government Solutions, LLC [KGS] 2018), and the Quality Assurance Project Plan (QAPP) for the Annual Long-Term Monitoring and Maintenance Program (S-A JV 2020). The S-A JV prepared this report on behalf of the United States Army Corps of Engineering (USACE) – New England District, under Contract Number W912WJ-19-D-0014.

1.1 Site Location

The former Fort Devens is located approximately 35 miles northwest of the city of Boston, within the towns of Ayer and Shirley in Middlesex County and Harvard and Lancaster in Worcester County. Devens was established in 1917 for military training and logistical support during World War I and operated as a permanent base from 1931 until closure by the Base Realignment and Closure Committee in 1996.

SHL encompasses approximately 84 acres in the northeast corner of the Main Post of the former Fort Devens (Figure 2). The landfill is bordered to the east by Plow Shop Pond and land formerly containing a railroad roundhouse, to the west by Shepley's Hill, to the south by recent commercial development, and to the north by wooded and residential areas. Plow Shop Pond to the east drains to Nonacoicus Brook to the north, which flows north/northwest and discharges to the Nashua River. Nonacoicus Brook is located north of the landfill in the North Impact Area (NIA; Figure 3).

1.2 Site Background

The Army reportedly began operating SHL by the early 1940s; however, evidence from test pits within the landfill suggests earlier usage, possibly as early as the mid-19th century. The landfill contains a variety of waste materials (more than 1.5 million cubic yards), which extend to a depth of approximately 40 feet below ground surface in the central portion of the landfill. Approximately 160,000 cubic yards (11 percent [%] of the total waste mass) appear to have been emplaced below the water table in a former wetland, and peat deposits have been identified below the waste (Harding ESE 2003; Sovereign 2011).

The Massachusetts Department of Environmental Protection (MassDEP) approved the landfill closure plan for SHL in 1985. The landfill was closed in five phases between 1987 and 1993 in accordance with 310 Code of Massachusetts Regulations 19.000. Closure consisted of capping the landfill, covering the cap with soil and vegetation, installing gas vents and groundwater monitoring wells, and constructing drainage swales. MassDEP issued a Landfill Capping Compliance Letter approving the closure in February 1996.

After closure of SHL, the Army completed remedial investigations (RIs) under the Comprehensive Environmental Response, Compensation, and Liability Act to characterize soil, sediment, surface water, and groundwater. RIs confirmed the presence of various contaminants at the site, the most predominant of which is arsenic. A subsequent feasibility study and Record of Decision (ROD; USACE 1995) resulted in a Remedial Action, which

specified long-term O&M of the landfill cap, groundwater monitoring, and a contingent remedial component requiring the design and construction of a groundwater extraction and treatment system if the landfill cap did not result in a reduction of groundwater contaminant concentrations (primarily arsenic) below risk-based cleanup goals by 2008. The Remedial Action Objectives are to:

- Protect potential residential receptors from exposure to impacted groundwater migrating from the landfill having chemicals in excess of maximum contaminant levels (MCLs).
- Prevent impacted groundwater from contributing to the contamination of Plow Shop Pond sediments in excess of human health and ecological risk-based concentrations.

Table 1 lists the relevant contaminants of concern (COCs) identified in the ROD and their target cleanup levels (CLs). Of the COCs listed below, only arsenic, iron, and manganese are currently sampled as part of the LTM program, in accordance with the LTMMP Update and LTMMP Addendum.

Table 1 - ROD-Specified Contaminants of Concern and Cleanup Levels

COC	CL (µg/L)	Selection Basis
Arsenic	10	MCL ¹
Manganese	1,715	Background ²
Iron	9,100	Background ²
Chromium	100	MCL
1,2-Dichlorobenzene	600	MCL
1,4-Dichlorobenzene	5	MCL
1,2-Dichloroethane	5	MCL
Lead	15	Action Level
Nickel	100	MCL
Sodium	20,000	Health Advisory
Aluminum	6,870	Background

Notes:

¹ Per the 2005 Five-Year Review, data are screened against the updated standard of 10 µg/L (USACE 2005), rather than the original standard of 50 µg/L from the ROD.

² Revised from ROD CL based on background evaluation.

µg/L = microgram per liter

CL = cleanup level

COC = contaminant of concern

MCL = maximum contaminant level

ROD = Record of Decision

In March 2006, the Army installed two extraction wells (EW-01 and EW-04) and constructed a groundwater extraction and treatment system. The system started with an initial pumping rate of 25 gallons per minute (gpm), which was gradually increased to a combined extraction rate of 50 gpm. In 2020, the arsenic treatment plant (ATP) average extraction flow rate was 54.4 gpm.

In 2011, the Army investigated Red Cove/Plow Shop Pond (known as Area of Contamination [AOC] 72) located east of SHL. The AOC 72 RI (AMEC 2011) concluded that the SHL remedy in place in 2011 (landfill capping and

groundwater extraction) did not eliminate groundwater flow and arsenic migration from SHL to Red Cove/Plow Shop Pond, and that groundwater discharge was contributing arsenic to sediment that could accumulate to levels that posed unacceptable risk to receptors. As a result, in August and September 2012, the Army installed a barrier wall between SHL and AOC 72 as a Non-Time Critical Removal Action. Documentation of the barrier wall installation was provided in a Final Removal Action Completion Report (Sovereign 2013a).

In addition to LTM and O&M activities, land use controls (LUCs) were established for the NIA in 2013 (Sovereign 2013b), and the Army subsequently issued an LUC Implementation Plan (LUCIP) for SHL in 2014 (Sovereign 2014). LUC areas are shown on Figure 4, and LUCs are discussed in Section 5.

2 Groundwater and Hydraulic Monitoring

Groundwater monitoring was conducted at SHL in 2020 in accordance with the LTMMMP Update, LTMMMP Addendum, and QAPP. Sampling events occurred in May 2020 and October/November 2020. Results of sampling are presented in the following sections. The LTM program includes wells in the Upgradient Area, within the landfill, on or near the west base of Shepley's Hill, near the Barrier Wall Area, near the ATP extraction wells, and within the NIA. These sampling and hydraulic monitoring locations are summarized in Tables 2 and 3, respectively.

A site plan showing the long-term monitoring well network is displayed on Figure 5. Groundwater monitoring field forms, laboratory analytical reports, and data validation reports are provided in Appendices A, B, and C, respectively.

2.1 Hydraulic Monitoring

Groundwater elevations at SHL monitoring wells and piezometers, including piezometers used to monitor performance of the barrier wall, were gauged on May 18 and November 4, 2020. During each event, an electronic water level meter was used to measure depth to water with an accuracy of ± 0.01 foot from the marked reference point at the top of the inside casing of each monitoring well/piezometer. LTM network wells were inspected and maintained, and new well locks were installed during the 2020 events where replacements were needed.

As shown in Tables 3 and 4, a total of 34 additional wells were gauged during the November 2020 event to assist with the development of groundwater contour maps and the analysis of the barrier wall modeling. A total of 65 monitoring wells were measured during the May 2020 gauging event. In November, 169 monitoring wells and two staff gauges were measured. Of these locations, seven wells and one stream gauge were dry, and two wells and one stream gauge could not be located and are presumed to be destroyed (Table 4).

Spring and fall 2020 groundwater elevation contour maps (Figure 6 and Figure 7, respectively) were developed based on the 2017 and 2018 monitoring well survey reports, which use the Massachusetts State Plane Coordinate System of North American Datum 1983 for horizontal control and the North American Vertical Datum (NAVD) 1988 for vertical control. Data from 29 bedrock wells and 34 deep overburden wells (for which shallower overburden data were available) were not used to develop the fall 2020 groundwater elevation contour map (Figure 7). Similar to previous monitoring events, the water levels measured in 2020 illustrate that groundwater flows generally from the southwest to the north toward Nonacoicus Brook, with a deflection of groundwater flow to the north by the barrier wall in the area west of the wall. Groundwater elevations were observed to be higher in the spring compared to the fall in the majority of overburden well locations by approximately 1 to 2 feet (Table 4). Historical groundwater elevations from the last five years (2016 through 2020) are included in Appendix D. The following groundwater hydraulic gradients were calculated in 2020:

- The gradient across the southern portion of the Landfill Area was calculated as 0.012 feet per foot (ft/ft) in November 2020, using wells SHL-15 (Upgradient Area) and PZ-12-10 (Barrier Wall Area).
- The gradient across the northern portion of the Landfill Area was calculated as 0.009 ft/ft in November 2020, using wells SHM-10 through SHM-13 (Landfill Area) to SHL-23 (Nearfield Area).
- The gradient across the Nearfield Area ranged from 0.002 ft/ft (May 2020) using wells EPA-PZ-2012-1A and SHM-05-41B (Nearfield Area) to 0.003 ft/ft (November 2020) using wells SHM-10-06A and SHM-10-16 (Nearfield Area).

- The gradient across the NIA ranged from 0.003 ft/ft (November 2020) using wells SHM-05-40X and SHM-10-10 (NIA) to 0.006 ft/ft (May 2020) using SHM-05-40X to SHM-13-06 (NIA).

In general, the horizontal hydraulic gradient is steepest across the Landfill Area (by two to four times greater) compared to other areas, and the gradient across the NIA is slightly steeper when compared to the Nearfield Area. The Barrier Wall Area hydraulic gradient is discussed in Appendix E.

All four sets of overburden and bedrock well pairs gauged during the November 2020 event were assessed with respect to the presence of vertical gradients. As shown in Table 5, below, slight positive vertical gradients (minor downward flow component) were observed in the Upgradient Area, Barrier Wall Area, and Nearfield Area, and a slight negative vertical gradient (minor upward flow component) was observed in the Landfill Area.

Table 5 - Vertical Hydraulic Gradients for Fall 2020

Well ID	Depth to Water (ft below MPE)	Groundwater Elevation (ft NAVD88)	Bottom of Screen (ft NAVD88)	Top of Screen (ft NAVD88)	Mid-Point of Screen (ft NAVD88)	Mid-Point of Screen Separation (ft)	Vertical Gradient Nov 2020
Upgradient Area							
N7-P2	32.10	223.94	222.04	227.04	224.54	35.96	0.010
N7-P1	32.00	223.59	187.59	189.58	188.59		
Landfill Area							
N5-P2	24.80	217.89	214.69	219.69	217.19	71.04	-0.001
N5-P1	24.70	217.95	145.15	147.15	146.15		
Barrier Wall Area							
N2-P2	5.26	216.90	213.16	218.16	215.66	31.15	0.004
N2-P1	5.24	216.77	182.01	187.01	184.51		
Nearfield Area							
SHM-93-22B	9.73	209.66	127.09	137.09	132.09	40.70	0.008
SHM-93-22C	11.35	209.34	86.39	96.39	91.39		

Notes:

ft = foot or feet

MPE = measuring point elevation

NAVD88 = North American Vertical Datum of 1988

The calculated vertical gradients above, when compared to the calculated horizontal gradients for the same areas, indicate that the vertical gradient in the southern portion of the Landfill Area is approximately an order of magnitude lower than the calculated horizontal gradient (-0.001 ft/ft vertically [upward] compared to 0.012 ft/ft horizontally) and greater vertically than horizontally in the Nearfield Area (0.008 ft/ft vertically [downward] compared to 0.002 and 0.003 ft/ft horizontally for May and November 2020, respectively). The slight upward gradient from bedrock to overburden in the southern portion of the Landfill Area is likely due to precipitation recharge to bedrock at Shepley's Hill discharging upward to overburden in the Landfill Area. The downward vertical gradient in the Nearfield Area is most likely due to extraction at EW-01 and EW-04.

2.2 Groundwater Sampling

A total of 63 and 110 well locations were sampled in spring and fall 2020, respectively. With the exception of semiannual sampling location SHP-2016-07A (observed to be dry in fall 2020), all locations were sampled in accordance with the LTMMP Update, LTMMP Addendum, and QAPP.

Samples were collected in accordance with the procedures outlined in the Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells Revision 3 and 4 (United States Environmental Protection Agency [USEPA] 2017). Dissolved metals and dissolved organic carbon samples were field-filtered using a 0.45-micrometer filter. Groundwater was purged using a bladder pump or peristaltic pump, depending on the measured water level. Groundwater was purged through a calibrated YSI multi-meter and a turbidity meter to monitor groundwater chemistry parameters, and samples were collected upon achievement of field parameter stability. Calibration records are included in Appendix A.

Groundwater samples were submitted to Eurofins TestAmerica Laboratories (Eurofins) of Savannah, Georgia and Arvada, Colorado, for the following analyses: dissolved metals (arsenic, iron, and manganese), chloride/sulfate, total alkalinity, and dissolved organic carbon. In accordance with the QAPP, quality assurance / quality control (QC) procedures included the collection of field duplicate samples, matrix spike (MS)/matrix spike duplicate (MSD) samples, and equipment blank samples.

2.2.1 2020 Data Summary

The spring and fall 2020 sampling results are summarized in Table 6 and Table 7, respectively. A summary of historical groundwater sampling results is provided in Appendix F. Figure 8 and Figure 9 present dissolved arsenic concentration results for the spring and fall 2020 sampling events, respectively. Arsenic concentration trend graphs for the following 19 wells are provided in Appendix G:

- Barrier Wall Area: SHL-4, SHL-11, SHL-20, and SHP-01-38A
- Nearfield Area: SHL-9, SHL-22, SHM-93-22B, SHM-93-22C, SHM-96-5B, SHM-96-5C, SHM-05-41B, SHM-05-41C, and SHM-05-42B
- Northern Impact Area: SHM-13-03, SHM-13-06, SHM-13-08, and SHM-05-40X
- Landfill Area: SHM-99-29X and SHM-10-14

Following is a summary of dissolved metals results from the sampling events conducted in 2020:

Spring 2020 Sampling Event

- Dissolved arsenic concentrations in groundwater exceeded the CL of 10 µg/L at 43 of the 63 sampled locations (68%, compared to 71% in 2019), with the highest concentration of 3,300 µg/L detected in extraction well EW-04 (Nearfield Area).
- Dissolved iron concentrations in groundwater exceeded the CL of 9,100 µg/L at 33 of the 63 sampled locations (52%, compared to 54% in 2019), with the highest concentration of 77,000 µg/L detected in well SHM-11-06 (Barrier Wall Area, east of Landfill Area, north of Barrier Wall).
- Dissolved manganese concentrations in groundwater exceeded the CL of 1,715 µg/L at 23 of the 63 sampled locations (37%, compared to 38% in 2019), with the highest concentration of 11,000 µg/L detected in well SHM-13-03 (Northern Impact Area, adjacent to Nonacoicus Brook).

Fall 2020 Sampling Event

- Dissolved arsenic concentrations in groundwater exceeded the CL of 10 µg/L at 62 of the 110 sampled locations (56%, compared to 62% in 2019), with the highest concentration of 6,800 µg/L detected in well SHM-10-15 (Landfill Area).
- Dissolved iron concentrations in groundwater exceeded the CL of 9,100 µg/L at 46 of the 110 sampled locations (42%, the same as in 2019), with the highest concentration of 86,000 µg/L detected in well SHM-10-14 (Landfill Area).
- Dissolved manganese concentrations in groundwater exceeded the CL of 1,715 µg/L at 40 of the 110 sampled locations (36%, compared to 39% in 2019), with the highest concentration of 9,700 µg/L detected in well SHM-96-5C (Nearfield Area, north of extraction wells).

2.2.2 Arsenic Concentration Trends

Arsenic concentration trends over time are analyzed for a set of 64 wells specified in the LTMMP Update (KGS 2018). Criteria for the statistical analyses include using wells in the set that have a minimum of four rounds of data available and have dissolved arsenic concentrations greater than or equal to 10 µg/L. Of the 64 wells specified in the LTMMP Update, a total of 29 (45%) had arsenic concentrations less than the CL in 2020. The 29 wells that had arsenic concentrations less than the CL in 2020 includes two of the three “background” wells specified in the LTMMP (SHL-12 and SHL-24, upgradient of the landfill) that continue to be included in the analyses, regardless of the concentration of arsenic at those locations. A total of 35 of the 64 wells specified in the LTMMP update exceeded the CL in 2020.

Arsenic data for 37 site-wide monitoring wells were evaluated in 2020 using ProUCL Mann-Kendall statistical software for environmental applications. This number includes the 35 of the 64 wells specified in the LTMMP Update that exceeded the CL in 2020, plus two background wells that below the CL in 2020 that are analyzed each year regardless, to evaluate upgradient conditions. The analysis evaluates whether there are statistically significant trends for arsenic concentrations over time at each location at a 95% confidence level.

The evaluation identified that of the 37 wells statistically tested, 19 wells (51%) were found to have statistically significant decreasing concentrations, one well (3%) was found to have increasing concentrations, and 17 wells (46%) showed no statistically significant trend at the selected 95% confidence level. Results are shown in Table 8 below. Figure 10 shows the arsenic concentration trend results and identifies locations included in the LTMMP Update for trend analyses that had arsenic concentrations less than the CL in 2020. ProUCL outputs for each well are included in Appendix H.

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Table 8 - 2020 Mann-Kendall Trend Analysis Results

Arsenic Concentration Below the CL of 10 µg/L in 2020	Statistically Significant Evidence of a Decreasing Trend	Insufficient Evidence of a Statistically Significant Trend	Statistically Significant Evidence of an Increasing Trend
EPA-PZ-2012-1A	EPA-PZ-2012-1B	EPA-PZ-2012-3A	SHM-10-11
EPA-PZ-2012-2A	EPA-PZ-2012-3B	EPA-PZ-2012-4A	–
EPA-PZ-2012-2B	EPA-PZ-2012-4B	EPA-PZ-2012-7B	–
EPA-PZ-2012-5A	EPA-PZ-2012-6B	SHL-9	–
EPA-PZ-2012-5B	N5-P1	SHL-12 ¹	–
EPA-PZ-2012-6A	SHL-24 ¹	SHL-15	–
EPA-PZ-2012-7A	SHM-05-40X	SHM-05-41C	–
SHM-05-42A	SHM-05-41A	SHM-10-06A	–
SHM-07-03	SHM-05-41B	SHM-10-07	–
SHM-10-02	SHM-05-42B	SHM-10-12	–
SHM-10-03	SHM-10-06	SHM-10-14	–
SHM-10-04	SHM-10-13	SHM-10-15	–
SHM-10-05A	SHM-13-07	SHM-10-16	–
SHM-10-08	SHM-13-08	SHM-13-03	–
SHM-10-10	SHM-93-22B	SHM-13-04	–
SHM-13-01	SHM-96-5B ²	SHM-13-06	–
SHM-13-02	SHM-96-5C	SHP-99-29X	–
SHM-13-05	SHM-99-31C	–	–
SHM-13-14S	SHM-99-32X	–	–
SHM-13-14D	–	–	–
SHM-13-15	–	–	–
SHM-93-22C	–	–	–
SHL-5	–	–	–
SHL-8S	–	–	–
SHL-8D	–	–	–
SHL-12 ¹	–	–	–
SHL-22	–	–	–
SHL-23	–	–	–
SHL-24 ¹	–	–	–

Notes:

¹ SHL-12 and SHL-24 are listed twice in the above table. These upgradient monitoring wells were below the CL for arsenic in 2020 but were analyzed using Mann-Kendall, per the LTMMP Update.

² SHM-96-5B was incorrectly listed in Data Quality Objective Step 5 of the 2015 LTMMP Update as SHL-96-5B.

³ Per Table 5-1 of the 2019 Annual Report (KGS 2021), SHP-1303 is not included above as it was “not found”.

µg/L = microgram per liter

CL = cleanup level

LTMMP = Long-Term Monitoring and Maintenance Plan

2.2.3 Groundwater Monitoring Field Parameters

Water quality parameters (including pH, specific conductivity, dissolved oxygen [DO], temperature, and oxidation-reduction potential [ORP]) were collected during each of the 2020 sampling events. ORP and DO are particularly significant field parameters at SHL, as they can be used as indicators of oxidation-reduction (redox) conditions in the aquifer. Under the reducing conditions present at much of the site, naturally occurring arsenic associated with iron and manganese oxyhydroxide minerals is released into solution due to reductive dissolution. For example, ferric iron [Fe(III)] present in the oxides is reduced to ferrous iron [Fe(II)], which is more soluble. Similarly, solid Mn(IV) minerals are reduced to more soluble Mn(II). These dissolution processes also release arsenic associated with the minerals; and the iron, manganese, and arsenic can then be detected in dissolved metals analyses. Microbial reduction of iron and manganese (frequently coupled to organic matter oxidation) is most favorable in the absence of oxygen, and dissolved oxygen can reoxidize iron and manganese; therefore, low DO is expected in zones with elevated iron and manganese. The ORP is a measure of the presence of redox-sensitive species in solution (including iron and manganese). Therefore, higher concentrations of iron and manganese would be expected in locations where low/negative ORP values and low DO concentrations are measured (Gannett Fleming, Inc. 2011).

Metals concentrations and associated field ORP measurements from the spring and fall 2020 groundwater sampling events are shown in Table 6 and Table 7, and summarized below:

- Of the 173 groundwater samples collected at SHL and analyzed for arsenic in 2020, 105 samples had concentrations exceeding the CL for arsenic and 67 samples had concentrations that either were not detected above the limit of detection or were detected below the CL:
 - Of the 67 samples that met the CL for arsenic, DO and ORP measurements indicate that 39% were collected from locations where the aquifer was oxidizing (ORP greater than 50 millivolts [mV] and DO greater than 1 milligram per liter [mg/L]), 36% were collected from locations screened in groundwater that was moderately reducing (where either ORP was greater than 50 mV or DO was greater than 1 mg/L), and 25% were collected at locations with groundwater that was reducing (ORP less than 50 mV and DO less than 1 mg/L). In comparison, samples that exceeded the CL for arsenic were generally collected from locations with more strongly reducing geochemical conditions: 18% from groundwater under oxidizing conditions, 38% from moderately reducing conditions, and 44% where the aquifer was reducing.
 - Of the samples that met the CL for arsenic, the mean ORP value was 81.9 mV (median of 72.4 mV) and the mean DO concentration was 2.85 mg/L (median of 1.13 mg/L). In comparison, samples that exceeded the CL for arsenic had a lower ORP and DO concentration: a mean ORP of 44.6 mV (median of 19.5 mV) and a mean DO concentration of 1.67 mg/L (median of 0.85 mg/L).
- Locations where iron and/or manganese concentrations exceed the CL generally overlap with locations that exceed the CL for arsenic, indicating reducing conditions in groundwater has affected all three of these naturally occurring metals:
 - Of the 79 samples that exceeded the CL for iron in 2020, 99% (78) of them also exceeded the CL for arsenic.
 - Of the 63 samples that exceeded the CL for manganese in 2020, 89% (56) of them also exceeded the CL for arsenic.

The above correlations indicate that dissolved metals in groundwater at SHL are more likely to exceed the CL when the redox state in groundwater is reducing and that the redox condition of the aquifer influences whether groundwater meets or exceeds the CLs for arsenic, iron, and manganese.

2.2.4 Quality Assurance/Quality Control

Eurofins was the primary contract laboratory used for the spring and fall 2020 LTM sampling events. Eurofins is compliant with the Department of Defense (DoD) Quality Systems Manual for Environmental Laboratories, version 5.3 (DoD 2019) under the DoD Environmental Laboratory Accreditation Program and holds current National Environmental Laboratory Accreditation Program accreditation for applicable analytical methods.

As part of the 2020 groundwater sampling events, quality assurance / QC samples were collected to ensure that the data quality objectives were met for the laboratory analysis. Field duplicate samples were collected during sampling events to evaluate field precision at the rate of 10% (1 per 10 samples). MS/MSD pairs were also submitted at a rate of 5% (1 per 20 samples) to evaluate matrix effects on analytical precision and accuracy.

Analytical results from the 2020 sampling events were reviewed and evaluated for data acceptability by Laboratory Data Consultants, Inc. of Carlsbad, California, in accordance with the USEPA Region 1 data validation guidelines (USEPA 2018), the QAPP, and the DoD General Data Validation Guidelines (DoD 2019). The method requirements from the DoD Quality Systems Manual version 5.3 (DoD 2019) and the USEPA SW-846 QC guidance were also used as supplemental information. The data validation reports for the SHL 2020 LTM sampling events are presented in Appendix C. No results from the LTM were rejected and the data are acceptable for use.

The following laboratory quality control deficiencies were noted during data validation:

Spring 2020

- Low-level detections of manganese in the lab method blanks resulted in qualification of the manganese results as not detected in samples PZ-12-10-SPR20, SHP-2016-1A-SPR, and EPA-PZ-2012-7A-SPR20.

Fall 2020

- Low-level detections of dissolved organic carbon in the continuing calibration blanks, equipment blanks, and/or lab method blanks resulted in qualification of the dissolved organic carbon results as not detected in the associated samples.
- Low-level detections of alkalinity in the lab method blank resulted in qualification of the alkalinity results as not detected in samples SHM-99-31A-FAL20 and SHM-07-03-FAL20.
- Low-level detections of iron in the calibration blanks and/or lab method blanks resulted in qualification of the iron results as not detected in samples SHM-13-14D-FAL20, SHL-22-FAL20, SHL-DUP07-FAL20, SHM-93-22C-FAL20, EPA-PZ-2012-2A-FAL20, SHM-13-02-FAL20, SHP-2016-2A-FAL20, SHP-2016-4B-FAL20, SHM-05-42A-FAL20, SHM-13-01-FAL20, SHL-8D-FAL20, SHL-8S-FAL20, SHM-10-02-FAL20, SHM-10-03-FAL20, SHM-10-08-FAL20, SHL-RB2-FAL20, SHL-RB4-FAL20, and SHM-10-05A-FAL20.
- Low-level detections of manganese in the lab method blanks resulted in qualification of the manganese results as not detected in sample SHM-93-22C-FAL20, SHL-10-FAL20, SHL-3-FAL20, SHM-13-01-FAL20, SHL-23-FAL20, and SHM-10-05A-FAL20.
- The MSD performed using sample PZ-12-10-FAL20 exhibited recoveries for iron and manganese less than the acceptance criteria. The iron and manganese results in sample PZ-12-10-FAL20 were qualified as estimated (UJ) with a potential for low bias in the reported result.
- The MS/MSD performed using sample SHM-13-04-FAL20 exhibited a recovery for arsenic greater than the acceptance criteria. In addition, the relative percent difference between the MS/MSD results was above the

control limit. The arsenic result in sample SHM-13-04-FAL20 was qualified as estimated (J) with a potential for high bias in the reported result.

- The MS/MSD performed using sample SHM-13-01-FAL20 exhibited recoveries for arsenic less than the acceptance criteria and manganese greater than the acceptance criteria. In addition, the relative percent difference between the MS/MSD results was above the control limit. The arsenic and manganese results in sample SHM-13-01-FAL20 were qualified as estimated (UJ).
- The MS/MSD performed using sample EPA-PZ-2012-5A-FAL20 exhibited recoveries for iron less than the acceptance criteria. The iron results in sample EPA-PZ-2012-5A-FAL20 were qualified as estimated (J) with a potential for low bias in the reported result.
- The MS performed using sample SHM-10-04-FAL20 exhibited a recovery for manganese less than the acceptance criteria. The manganese result in sample SHM-10-04-FAL20 was qualified as estimated (J) with a potential for low bias in the reported result.
- The serial dilution performed using sample SHM-11-06-FAL20 exhibited results for iron and manganese outside of the acceptance criteria. The iron and manganese results in sample SHM-11-06-FAL20 were qualified as estimated (J).

Laboratory Data Consultants, Inc. reviewed and updated the database with appropriate data qualifiers as needed. Laboratory analyses were confirmed to have been performed in general compliance with the precision, accuracy, representativeness, completeness, comparability, and sensitivity requirements listed in the QAPP (S-A JV 2020), with the exceptions summarized above. Sample results that were qualified as estimated (UJ/J) due to quality control exceedances are usable with caution. No significant QC deficiencies were noted (i.e., no results were rejected), and analytical results reported for the 2020 LTM samples were deemed valid and usable for all purposes.

2.3 Conclusions

The results of the spring and fall 2020 site-wide monitoring events continue to illustrate a general groundwater flow direction from the west/southwest to the north toward Nonacoicus Brook, with a deflection of groundwater flow to the north in the area west of the barrier wall near Red Cove at Plow Shop Pond. Concentrations of arsenic, iron, and manganese in groundwater continue to exceed CLs in various wells at SHL and in the NIA (Tables 6 and 7). Locations where dissolved metals (arsenic, iron, and manganese) concentrations exceed the CL are generally under more reducing geochemical conditions than locations where dissolved metals concentrations meet the CL.

The groundwater monitoring program will continue in accordance with the LTMMMP Update and LTMMMP Addendum until a new LTMMMP is prepared. The 2020 scope included additional work requested by USEPA in addition to what is included in the LTMMMP Update and LTMMMP Addendum:

- Continued collection of geochemical and hydrologic data from the nested piezometers (SHP 2016-1A/B through 5A/B) in spring and fall, until fall 2021.
- Continued collection of geochemical and hydrologic data for a minimum of five years (through 2021) for USEPA-added wells to the monitoring network.
- Continued collection of water level data from piezometers SHP-2017-01 and -02 located near the extraction wells in spring and fall until fall 2021.

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- Continued collection of geochemical and hydrologic data from bedrock wells SHP-2016-06A/B/C and SHP-2016-07A/B in spring and fall until fall 2021.
- Continued collection of hydrologic data from wells SHM-10-11, N6-P1, and SHP-99-35X in spring and fall to provide more hydraulic control in the southern portion of the landfill through fall 2021.

An updated LTMMP will be prepared in 2021 and submitted to the USEPA and DEP for review and comments. The LTMMP will optimize the monitoring program based on current groundwater conditions at SHL.

3 Landfill Maintenance and Monitoring

In accordance with the LTMMMP Update, SHL was inspected, and routine maintenance was performed during 2020. All landfill maintenance and monitoring activities were completed by Sovereign.

3.1 Landfill Inspection

The annual inspection identifies and corrects problems pertaining to the effectiveness of the cap system, erosional controls, gas vents, and sampling points. The landfill inspection report with supporting photographs is presented in Appendix I. A summary of the report findings is provided below:

- The landfill cap and utility berms were mowed between September 29 and 30, 2020. In addition, large vegetative growth and shrub growth were removed to the extent practical.
- An annual inspection of the landfill and adjacent areas was conducted on October 8, 2020. The overall condition of the landfill, utility berm, drainage swales, and culverts was found to be satisfactory. No new topographic depressions or significant erosion was observed.
- The landfill gas points (LGPs) and vents (Figure 11) were observed to be in good condition.
- Monitoring wells and piezometers located on the landfill cap or perimeter that are currently part of the LTM network were observed to be in good condition overall.
- The landfill access road was observed to be in good condition.
- The security gate surrounding the ATP remains in good condition.
- Some wetland encroachment was observed in the swales located in the southern portion of the landfill. However, the individual areas of encroachment are infrequent, small, and confined to the swales.
- The recreational field located south of the access road in the middle of the southern half of the landfill appeared to be in good condition. The field is being used through a lease to the Massachusetts Development and Finance Agency (MassDevelopment) for recreational use of aerial drones (launching/landing). The recreational area was routinely mowed by the drone users in 2020, and no damage to the landfill cap was observed.

Sovereign provided the following recommendations for 2021:

- Continue annual inspections and mowing of the landfill cap, utility berm, drainage swales, and culverts (including removal of tree and shrub growth).
- Continue to monitor the condition of the LGPs and monitoring wells.
- Continue to monitor for erosion and depressions/settlement within the landfill and repair, as necessary.
- Conduct routine checks of the recreational field to confirm the integrity of the landfill cover, gas vents, and monitoring wells in this area.

3.2 Landfill Gas Monitoring

Sovereign completed annual sampling of landfill gas vents and LGPs (Figure 11) on October 13, 2020. Sampling activities were conducted in accordance with procedures described in the MassDEP Landfill Technical Guidance Manual, as revised May 1997 (MassDEP 1997). Landfill gas sampling was conducted with a multi-gas meter and

landfill gas meter and included the following parameters: volatile organic compounds (VOCs), oxygen, hydrogen sulfide, lower explosive limit (LEL), carbon monoxide, carbon dioxide, and methane. Each parameter was measured and recorded twice (initial reading and post-purge reading). Gas monitoring results, gas probe construction details, and landfill gas monitoring field forms are provided in Appendix I. Results appear to be generally consistent with historical observations. Following is a summary of the results:

- Field readings of barometric pressure were relatively stable and ranged from 29.52 to 29.67 inches of mercury. The background barometric pressure was recorded as 29.67 inches mercury at the ATP at the start of the day.
- VOC detections ranged from 0.0 to 30.7 parts per million (ppm) (initial) and 0.0 to 0.7 ppm (post-purge). The highest initial reading of 30.7 ppm (gas probe LGP-09-05X) decreased to 0.5 ppm post-purge.
- Oxygen ranged from 0.2 to 21.9% (initial) and 0.1 to 20.9% (post-purge).
- Hydrogen sulfide and carbon monoxide were not detected at any location (initial or post-purge).
- The LEL ranged from 0.0 to 99% (initial and post-purge). LEL detections were observed in all gas vents (except for vent GV-3) and in gas probe LGP-09-05X (which increased from 30% initial to 99% post-purge).
- Carbon dioxide detections ranged from 0.0 to 22.2% (initial) and 0.0 to 39.1% (post-purge).
- Methane detections ranged from 0.0 to 17.5% (initial) and 0.0 to 61.0% (post-purge). The highest initial and post-purge readings were detected in gas probe LGP-09-05X.

4 Arsenic Treatment Plant Operations, Maintenance, and Monitoring

The SHL ATP treated and discharged 27,039,600 gallons of groundwater between January 1 and December 31, 2020, bringing the cumulative treated volume total to approximately 324,277,250 gallons since system startup in 2006 (Appendix I). The ATP operations, maintenance, and monitoring for the period of January 1 through December 31, 2020 was conducted by Sovereign. The 2020 data are presented in the following sections.

4.1 System Description

The ATP is designed to remove dissolved arsenic from extracted groundwater through co-precipitation with iron followed by microfiltration (MF). The ATP consists of the following components:

- Extraction system (extraction wells EW-01 and EW-04)
- Chlorine dioxide generation and addition in order to oxidize iron
- Coagulation via a contact tank with a direct drive batch tank mixer
- MF of the water to concentrate precipitated solids
- Solids removal via an inclined plate clarifier
- Bag filtration and discharge of the inclined plate clarifier decant water
- Polymer-aided flocculation of sludge using a filter bed roll-off (FBRO)
- Treated water discharge to the Devens Publicly Owned Treatment Works

Historical monthly discharge totals and an operational summary of the monthly online hours, flow totals, and operating status during 2020 are presented in Appendix I.

4.1.1 System Efficiency and Routine Maintenance

During 2020, the treatment plant was operational approximately 94.4% of the total available hours during the calendar year (i.e., "uptime"), which is an increase from the 2019 uptime of 87.4%. Non-operational time is associated with both routine and non-routine (Section 4.1.2) system maintenance, repairs, and upgrades. When online, the average flow through the plant during the year was 54.4 gpm. The plant achieved an effective average extraction rate (i.e., the extraction rate calculated by dividing the volume pumped by the elapsed time during the year, not the actual online time) of 51.3 gpm in 2020 (compared to 47.5 gpm in 2019).

The FBRO was emptied routinely (every one to two weeks) in 2020 due to high sludge generation from inorganics (primarily iron) in the influent. This is consistent with historical FBRO maintenance. A total of 275.54 tons of sludge was removed in 2020 by Global Remediation Services, Inc. The sludge removal process was optimized, which resulted in zero downtime attributable to FBRO operations for the ATP in 2020. FBRO disposal events in 2020 are summarized in Appendix I.

The ATP MF system continues to require periodic clean-in-place (CIP) procedures to prevent long-term fouling of the filter membranes. The Army has continued to optimize system operations, and currently CIP events are conducted approximately every 21 to 44 days. Extended CIP events are conducted only in situations when the level of filter fouling is greater than normal, most likely because of non-optimal dosage concentration of chlorine

dioxide. The system non-operational time associated with CIP procedures is detailed in Appendix I for each month.

4.1.2 Non-Routine System Maintenance, Repairs, and Upgrades

This section details major system non-routine maintenance activities encountered or implemented, along with system upgrades completed during 2020. Monthly shutdown and maintenance events, along with associated system downtimes, are presented in Appendix I. Following is a summary of each non-routine item:

- March 23, 2020 – A fitting on the sodium chlorite rotometer was observed to be leaking. The system was taken offline to repair.
- April 12, 2020 – A leak in Effluent Pump 2 caused the MF basket strainer transducer to fail, resulting in the system shutting down. The effluent pump and transducer were repaired on the same day.
- August 12, 2020 – The system was taken offline briefly to diagnose loss in pressure in the air compressor. Upon investigation, it was determined that the air compressor pressure switch was failing due to normal operational wear. A new pressure switch was subsequently ordered, and the system was brought back online on August 14, 2020.
- August 28, 2020 – New effluent and MF pH meters were installed to replace the former meters due to normal operational wear.
- August 31, 2020 – The system shut down due to a faulty MF input/output card. A new MF input/output card was subsequently installed on September 1, 2020.
- December 4, 2020 – The system shut down due to a faulty recycle pump relay. The pump was reset, and the system was brought back online. The system went down again on December 18, 2020, due to the faulty relay. On December 19, 2020, the recycle pump was taken offline, and a temporary bypass pump was installed to allow for system operation. On December 28, 2020, a new relay was installed, and the recycle pump was brought back online.
- December 21, 2020 – The system shut down due to chlorine dioxide low flow. Upon investigation, it was determined that the chlorine dioxide injection valve was clogged. The valve was subsequently serviced on December 22, 2020, and the system was brought back online.

4.2 Arsenic Treatment Plant Monitoring

This section details ATP influent and effluent sampling for arsenic and other COCs conducted during 2020. All samples were analyzed by SGS Laboratories of Dayton, New Jersey. The associated laboratory analytical reports for the ATP monitoring conducted by Sovereign are included as Appendix B.

4.2.1 Influent

4.2.1.1 Metals

The ATP system influent is sampled on a quarterly basis for metals (arsenic, iron, and manganese). Influent inorganic sampling is not required by the ATP MassDevelopment Landfill Discharge Permit Number 020 (MassDevelopment 2019), or by the LTMMP Update, but is monitored to gauge system loading and to ensure that

a sufficient iron concentration is maintained to promote iron and arsenic co-precipitation and coagulation. The original system design recommended a minimum iron concentration of 40 mg/L. Current influent iron concentrations remain above this level (average of 50.55 mg/L in 2020). The ATP was designed with a ferric chloride addition system with the ability to add ferric chloride to the influent if deemed necessary based on results of influent inorganic sampling; this component of the system has not been necessary to activate and has subsequently been decommissioned.

Metals concentrations have declined since system startup in 2006, but remain high enough for effective treatment, averaging 64.35 mg/L from 2006 through 2020. Individual average concentrations for iron, arsenic, and manganese are 59.30, 2.87, and 2.18 mg/L, respectively, for that time period. During 2020, the average iron, arsenic, and manganese concentrations were 50.55, 2.89, and 2.18 mg/L, respectively (55.62 mg/L total combined). Influent loading concentrations of iron, arsenic, and manganese are presented and graphically illustrated in Appendix I.

4.2.1.2 Volatile Organic Compounds and Dissolved Gases

In accordance with the LTMMP Update, and as part of the landfill closure monitoring program, annual ATP influent sampling was conducted for VOCs and dissolved gases (methane and ethane) on September 4, 2020. Results are documented in Appendix I and summarized below:

- Methane was detected at concentrations of 1,370 µg/L (EW-01) and 671 µg/L (EW-04) in the sampled influent. Current methane concentrations are less than the 2019 sampling result of 2,040 µg/L at EW-01 and more than the 2019 sampling result of 4.9 µg/L at EW-04.
- Ethane was detected at 0.30 µg/L in EW-01 influent and non-detect in EW-04 influent. Results of influent ethane concentrations for 2019 were non-detect at both EW-01 and EW-04.
- Total VOC concentrations were 16.67 µg/L and 2.2 µg/L in influent sampled from EW-01 and EW-04, respectively. These low concentrations of VOCs are consistent with historical observations.

4.2.2 Effluent

The USACE is authorized to discharge treated groundwater from the ATP to the Devens Municipal Sewerage System in accordance with Landfill Discharge Permit Number 020. The current permit, which mandates effluent sampling for arsenic and other select parameters on a monthly, quarterly, and/or annual basis and a maximum daily flow of 93,600 gallons per day (65 gpm), was last renewed on June 28, 2019 and is in effect until June 28, 2022 (MassDevelopment 2019). There were no changes to the permit in 2020. Effluent sampling results are included in Appendix I and summarized below:

- Arsenic samples were collected on a monthly basis, with results ranging from 17.9 to 60.6 µg/L. These concentrations were less than the effluent limitation of 75 µg/L, which is a Special Condition of the discharge permit and is lower than the local effluent limitation of 200 µg/L (MassDevelopment 2019).
- Select metals (barium, manganese, and magnesium) and other parameters (chloride, nitrate, and sulfate) were sampled on a quarterly basis (March, June, September, and December 2020). Sampling for these parameters is required by the permit, but no effluent limitations have been established.
- Select metals (chromium [total], cadmium, copper, lead, silver, selenium, and mercury) along with total toxic organics and total petroleum hydrocarbons were sampled on an annual basis in September 2020. Total toxic

organics are equal to the sum of total VOCs, semi-volatile organic compounds, pesticides, and polychlorinated biphenyls. Concentrations of all parameters were within permit-defined discharge limitations.

4.3 Arsenic Treatment Plant Optimization

The deployment of pressure transducers in the extraction wells and the MF module upgrades in January 2015 have allowed for further optimization of the ATP. The pressure transducers deployed in the extraction wells have eliminated the potential exposure of the well screen to air that is known to cause iron fouling. Thus, system downtime has been reduced and the system can now be controlled in a manner to optimize flow rates to best meet hydrogeologic capture goals. The MF module upgrades have increased the total number of MF modules to 10 and have allowed for an increase in the average flow rate and output of the ATP.

4.4 Recommendations

No significant changes are proposed for the ATP operation and maintenance in 2021. The Army is planning to pilot test an alternate metal removal technology in 2021 to determine if this equipment can be used to effectively replace the existing microfilter (MF) system to improve the performance and safety of the ATP. The testing will include modifying the oxidant from chlorine dioxide to a less reactive compound and use of an inclined plate settler (e.g., a Lamella Gravity Settler). If the results of the pilot tests are favorable, then plans for modifications to the ATP will be submitted to the USEPA and MassDEP for review.

The plant will continue to operate at a flow rate of approximately 50 gpm each month, with continued maintenance to include the following:

- The influent piping will be inspected annually and cleaned, if necessary, during a scheduled CIP event. This will prevent the build-up of precipitate within the system that could restrict flow.
- System components will be regularly inspected and replaced prior to the end of their operational life. This will minimize operational downtime associated with equipment failure.

5 Land Use Controls

In accordance with the LUCIP (Sovereign 2014), the Army conducts annual monitoring and maintenance activities, which include Institutional Controls (ICs) and Affirmative Measures.

5.1 Institutional Controls

The LUC Area (Figure 4) is actively monitored, and any required changes to the area are made to the LUCIP, in consultation with and concurrence from the USEPA and MassDEP. Reports on the implementation and enforcement of the ICs are made to the Town of Ayer and MassDEP, including any instances where groundwater extraction is observed.

A review of the ICs was conducted during 2020; no new construction activities or other changes were observed.

5.2 Affirmative Measures

Affirmative Measures for the SHL LUCs include the following:

- An informational pamphlet with contact information is distributed annually to properties within the NIA and is included on the Ayer Board of Health website (<https://www.ayer.ma.us/board-health/pages/shepleys-hill-landfill-resources>) under the title: Land Use Control Implementation Plan – Restriction of Groundwater Use, September 2020.
- A door-to-door survey is conducted every five years to residents within the LUC Area to provide the information pamphlet in person and provide general information on the groundwater moratorium. A survey was completed in 2019, with the next survey scheduled for 2024.
- A list of property owners and resident addresses within the LUC Area is updated on an annual basis for implementation of the LUCIP actions noted; the LUCIP is distributed to appropriate parties.
- The Army meets with the Board of Health annually, or as needed if a change in the groundwater contamination distribution in the aquifer occurs.

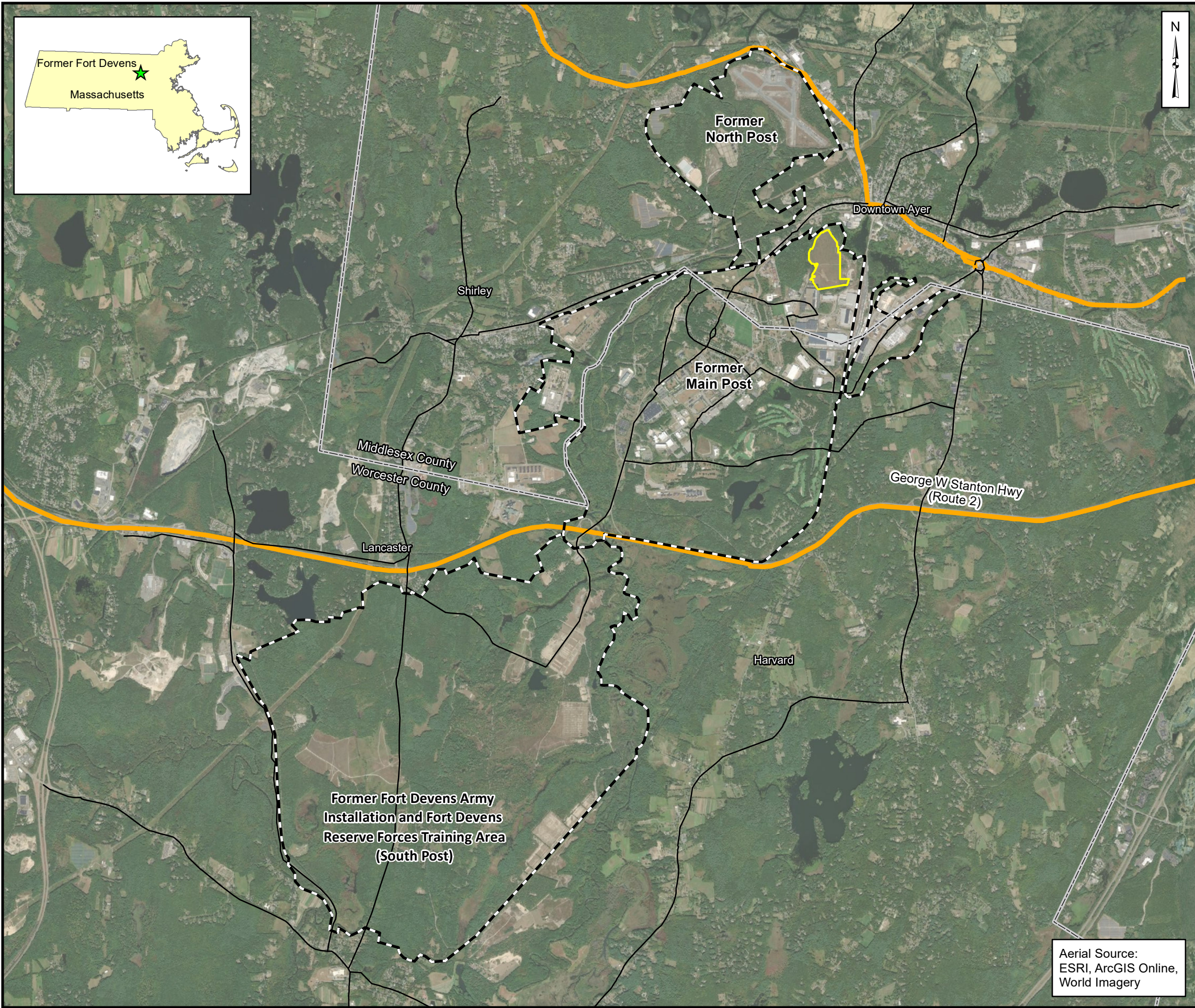
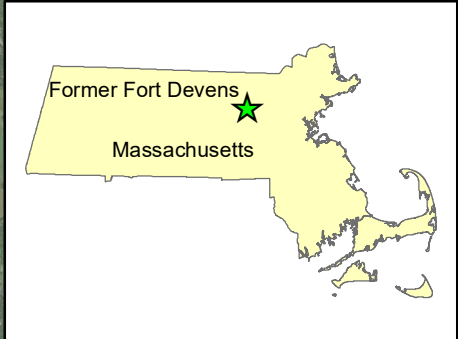
Educational pamphlets were mailed to occupants of properties identified within the LUC Area via the United States Postal Service on September 18, 2020. The educational pamphlet was also provided to the Ayer Board of Health on January 27, 2021, to post on its public website.

In summary, no deficiencies or deviations from the LUCs were noted; no corrective actions are required. The completed LUCIP checklist, list of properties/addresses within the LUC area, and educational pamphlet are included in Appendix J.

6 References

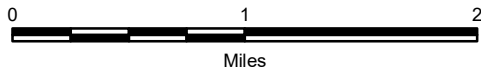
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Figures



Legend

-  Former Fort Devens Boundary
-  Shepley's Hill Landfill Boundary
-  County Line
-  Highway
-  Major Road



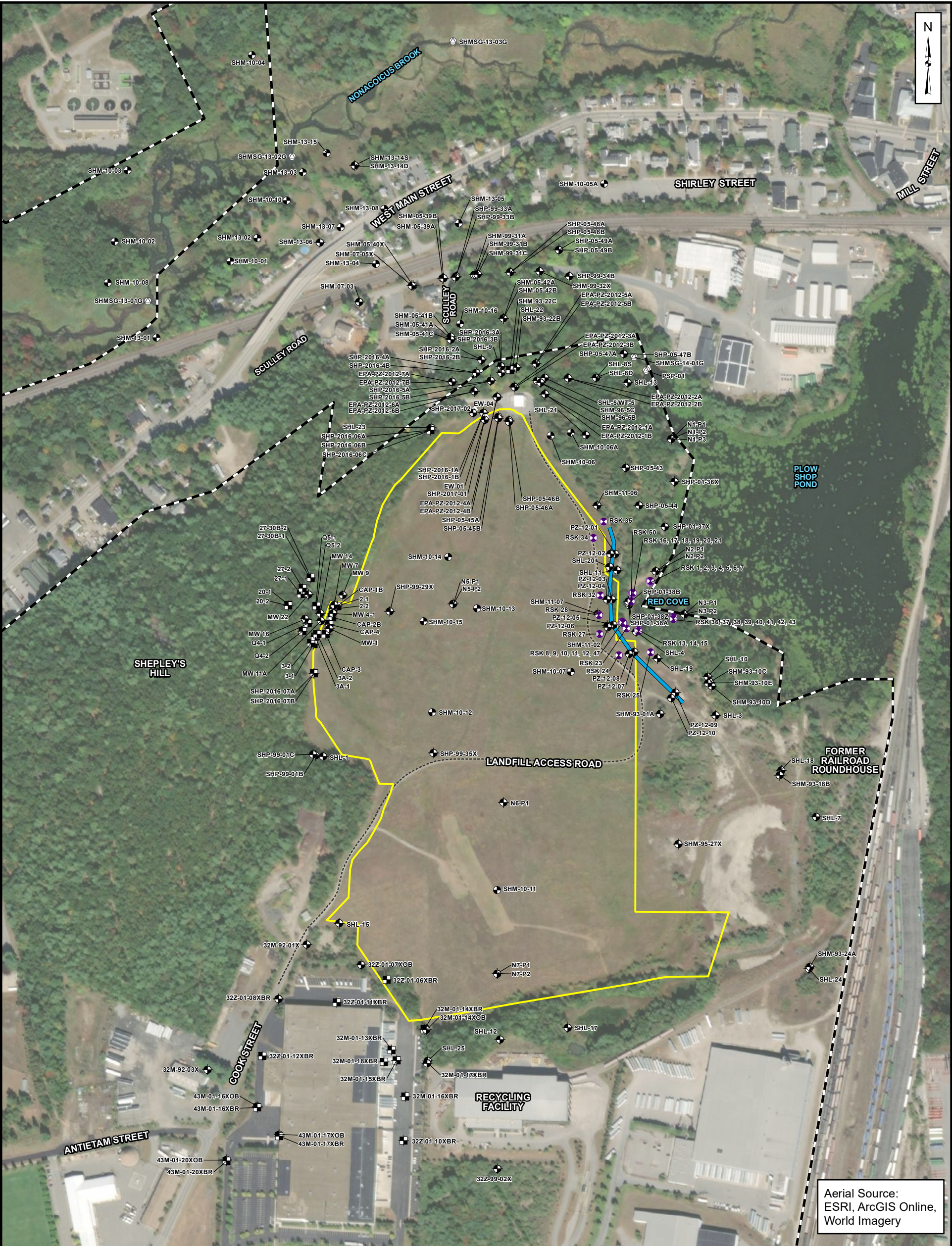
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Devens, Massachusetts

Site Location

Aerial Source:
ESRI, ArcGIS Online,
World Imagery



**Figure
1**



- Legend
- Former Fort Devens Boundary
 - Shepley's Hill Landfill Boundary
 - Overburden Monitoring Well/Piezometer
 - Groundwater Profiling Location/Monitoring Well
 - Monitoring Well
 - Bedrock Monitoring Well
 - Extraction Well
 - Stream Gauge
 - Barrier Wall
 - Landfill Access Road

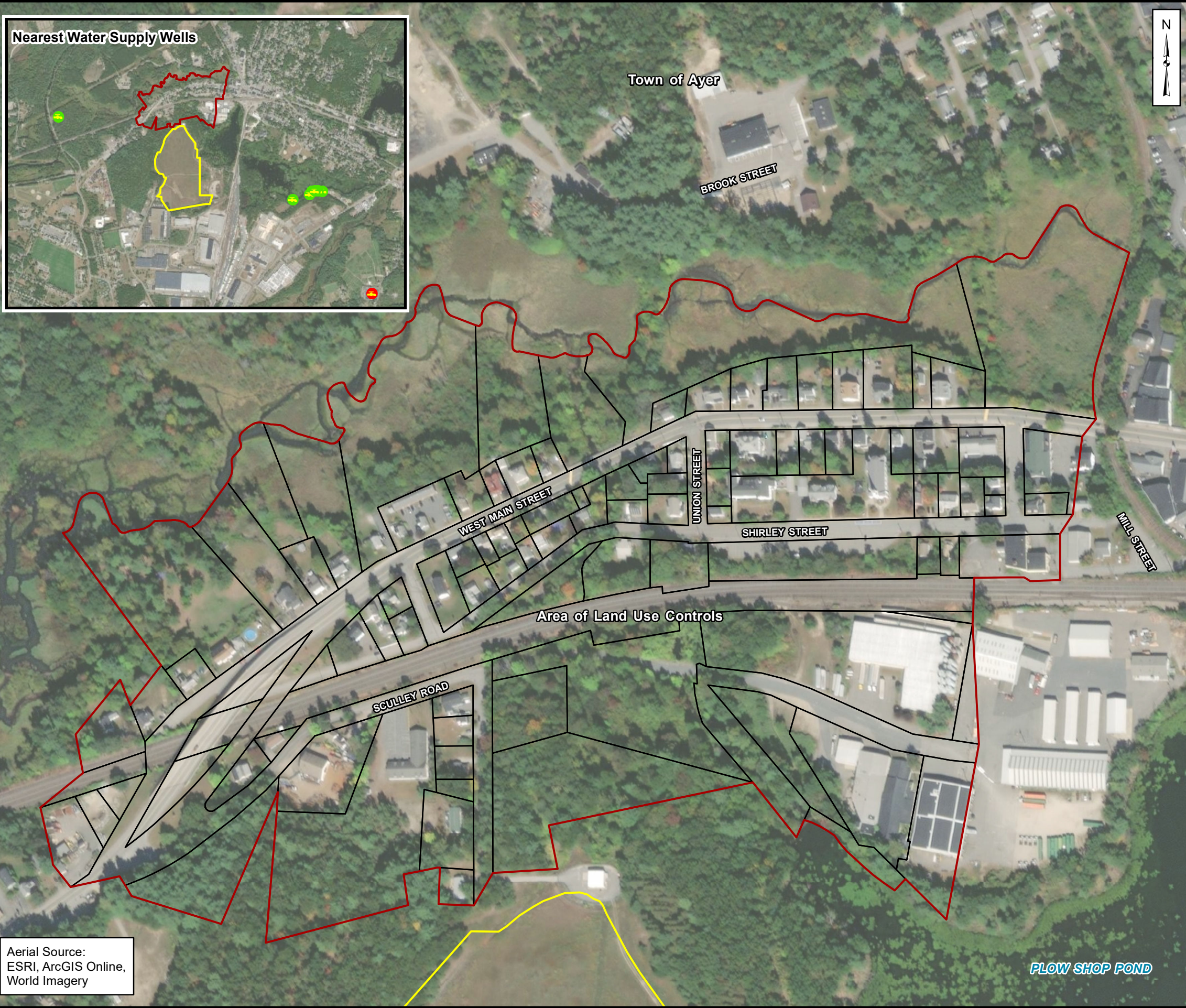
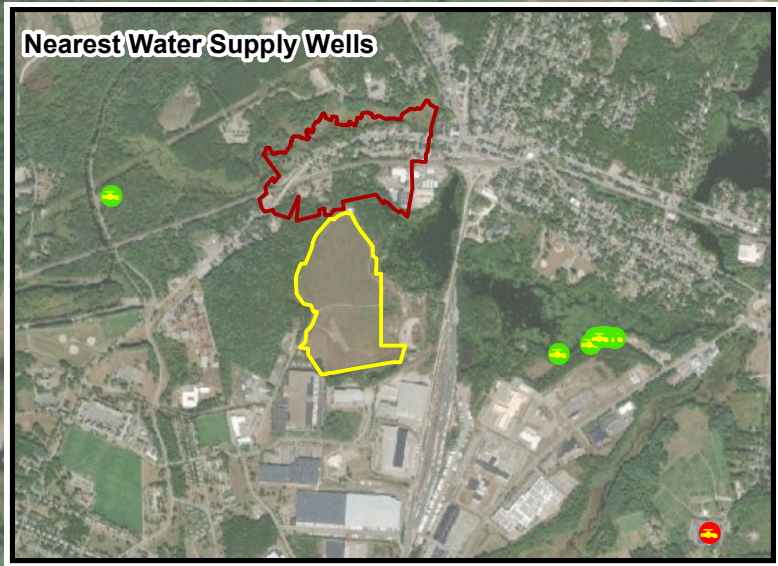
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Site Plan

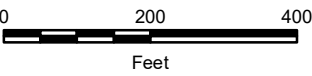
SERES
Engineering & Services, LLC
ARCADIS
a joint venture

Figure
2



- Legend**
- Shepley's Hill Landfill Boundary
 - Area of Land Use Controls
 - Property Boundary
 - Community Groundwater Source
 - Non-Community Groundwater Source

Parcel Source: Level 3 Assessors' Parcel Mapping
 Public Water Supply Source: Massachusetts DEP



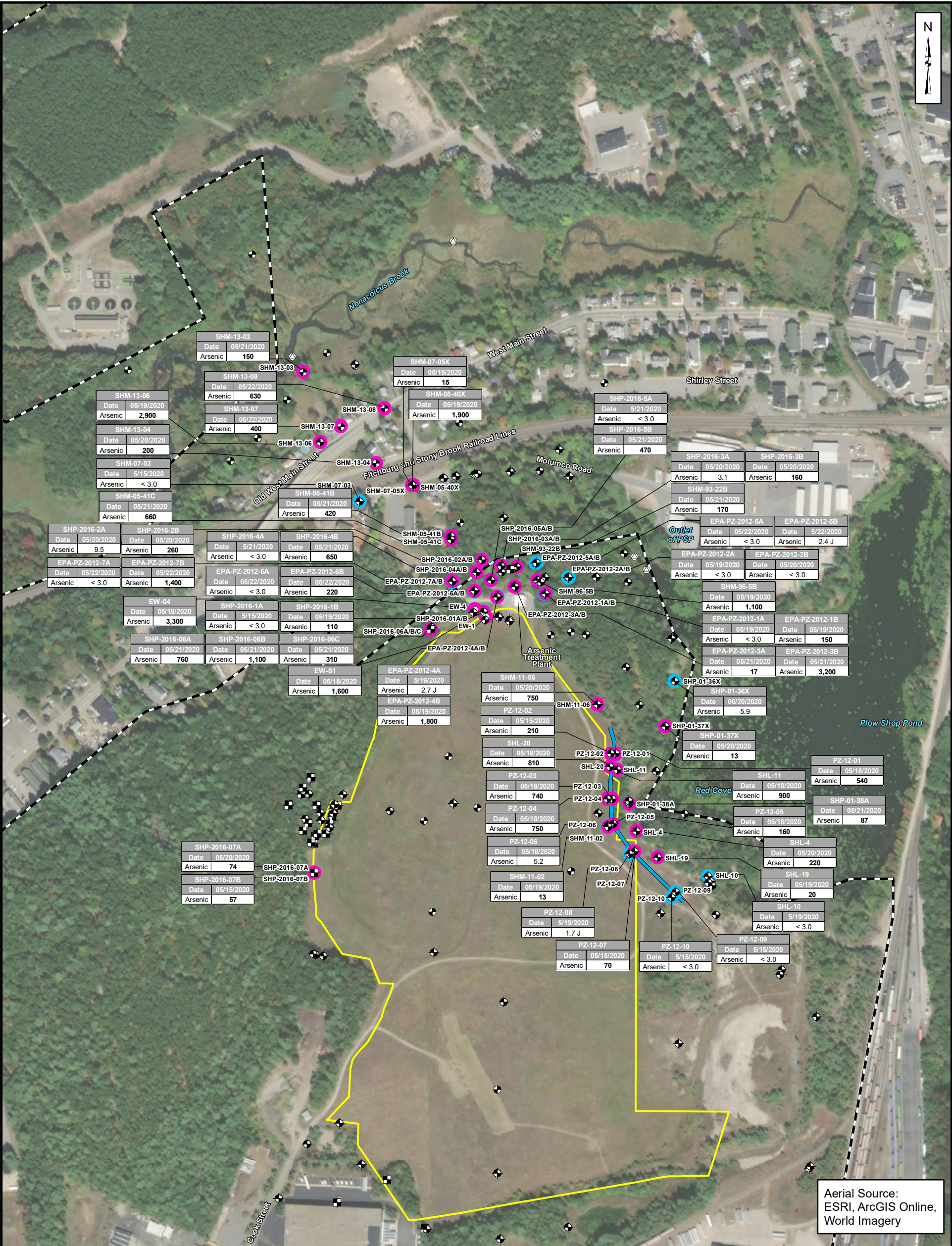
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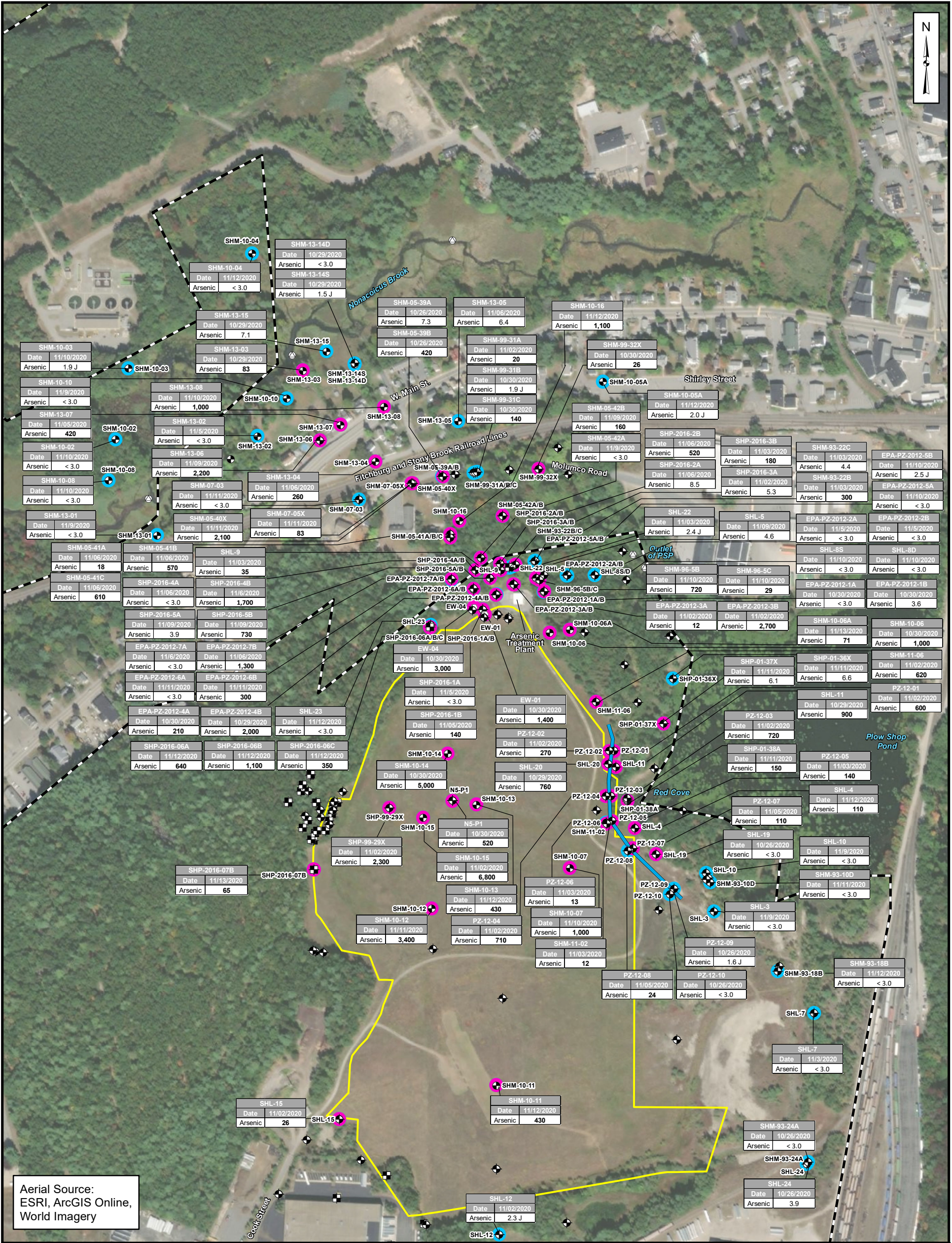
Area of Land Use Controls



**Figure
4**

Aerial Source:
 ESRI, ArcGIS Online,
 World Imagery





- Legend
- Former Fort Devens Boundary
 - Shepley's Hill Landfill Boundary
 - Well with Arsenic Concentration Above 10 µg/L
 - Well with Arsenic Concentration Below 10 µg/L
 - Overburden Monitoring Well/Piezometer
 - Groundwater Profiling Location/Monitoring Well
 - Bedrock Monitoring Well
 - Extraction Well
 - Stream Gauge
 - Barrier Wall

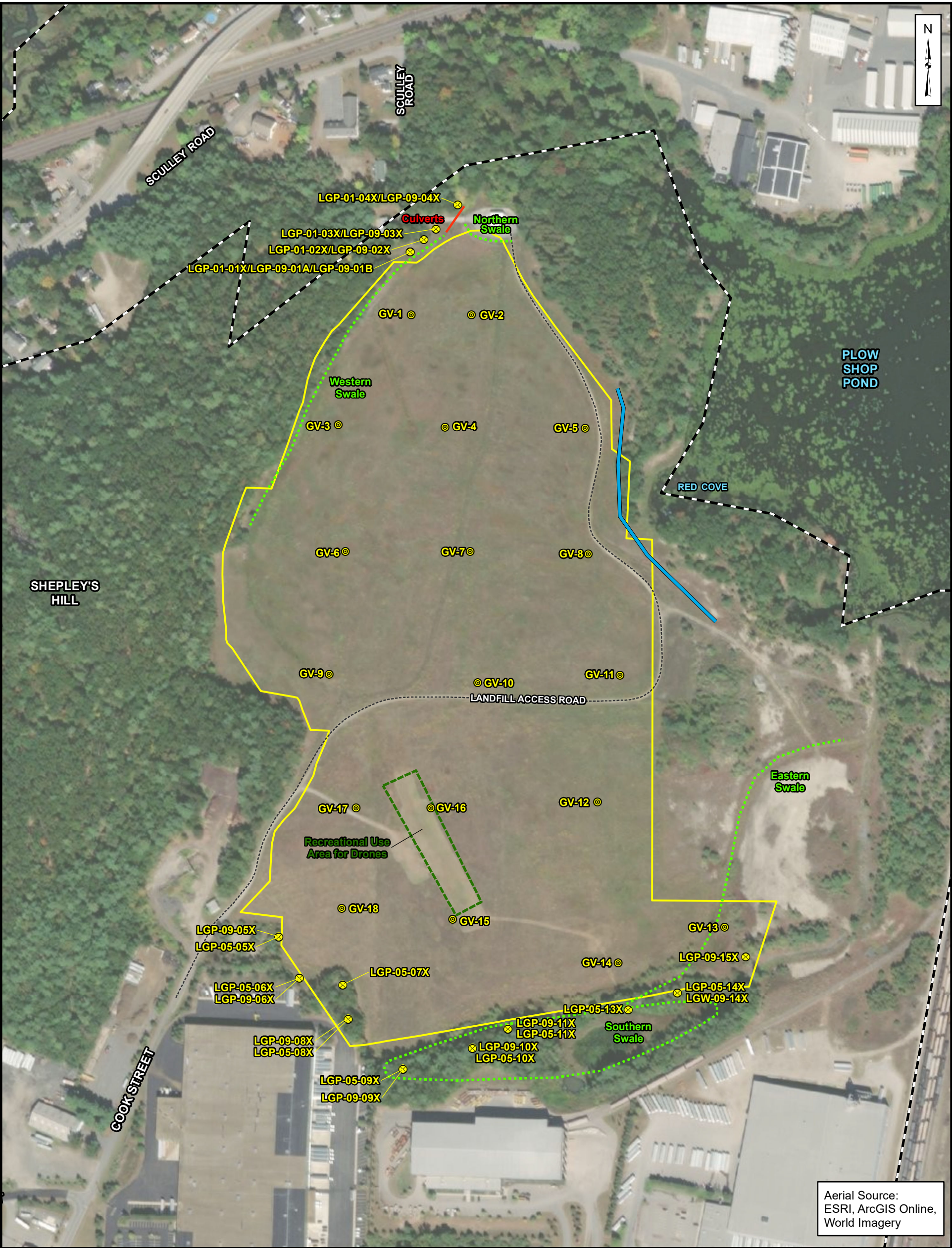
- Notes:
1. All concentrations in micrograms per liter (µg/L).
 2. J = Estimated Result
 3. Arsenic GW-1 Standard = 10 µg/L
 4. **BOLD** values indicate GW-1 exceedances.

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Dissolved Arsenic in Groundwater
October - November 2020



Figure
9



Aerial Source:
ESRI, ArcGIS Online,
World Imagery

Legend

Former Fort Devens Boundary

Shepley's Hill Landfill Boundary

Gas Vent

Gas Probe

Culvert

Drainage Swale

Landfill Access Road

Barrier Wall

Recreational Use Area for Drones

0

200

400

Feet

2020 Annual Report
Shepley's Hill Landfill
Former Fort Devens Army Installation
Devens, Massachusetts

Landfill
Gas Probes and Vents

SERES

Engineering & Services, LLC

ARCADIS

a joint venture

Figure
11

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Tables

Table 2
LTMMP Sampling Program
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
PZ-12-01	Barrier Wall	Semiannual	237.55	24.0 - 34.0	213.55 - 203.55	OB (shallow)
PZ-12-02	Barrier Wall	Semiannual	237.79	24.0 - 34.0	213.79 - 203.79	OB (shallow)
PZ-12-03	Barrier Wall	Semiannual	236.40	22.0 - 32.0	214.40 - 204.40	OB (shallow)
PZ-12-04	Barrier Wall	Semiannual	238.20	22.0 - 32.0	216.20 - 206.20	OB (shallow)
PZ-12-05	Barrier Wall	Semiannual	238.73	26.0 - 36.0	212.73 - 202.73	OB (mid)
PZ-12-06	Barrier Wall	Semiannual	242.18	26.0 - 36.0	216.18 - 206.18	OB (mid)
PZ-12-07	Barrier Wall	Semiannual	244.59	18.0 - 28.0	226.59 - 216.59	OB (mid)
PZ-12-08	Barrier Wall	Semiannual	244.83	18.0 - 28.0	226.83 - 216.83	OB (mid)
PZ-12-09	Barrier Wall	Semiannual	241.93	22.0 - 32.0	219.93 - 209.93	OB (shallow)
PZ-12-10	Barrier Wall	Semiannual	242.28	22.0 - 32.0	220.28 - 210.28	OB (shallow)
SHL-10	Barrier Wall	Semiannual	248.02	24.0 - 39.0	224.02 - 216.02	OB (shallow)
SHL-11	Barrier Wall	Semiannual	235.47	12.0 - 27.0	223.47 - 208.47	OB (shallow)
SHL-19	Barrier Wall	Semiannual	240.50	20.0 - 30.0	220.50 - 210.50	OB (shallow)
SHL-20	Barrier Wall	Semiannual	235.95	39.0 - 49.0	196.95 - 186.95	OB (Deep)
SHL-3	Barrier Wall	Annual	246.95	24.0 - 34.0	222.95 - 212.95	OB (mid)
SHL-4	Barrier Wall	Semiannual	227.48	3.0 - 13.0	224.48 - 214.48	OB (shallow)
SHM-11-02	Barrier Wall	Semiannual	240.73	39.0 - 49.0	201.73 - 191.73	BR
SHM-11-06	Barrier Wall	Semiannual	236.17	25.0 - 35.0	211.17 - 201.17	OB (shallow)
SHP-01-36X	Barrier Wall	Semiannual	223.95	3.0 - 8.0	220.95 - 215.95	OB (shallow)
SHP-01-37X	Barrier Wall	Semiannual	222.79	1.0 - 6.0	221.79 - 216.79	OB (shallow)
SHP-01-38A	Barrier Wall	Semiannual	220.86	1.5 - 6.5	219.36 - 214.36	OB (shallow)
N5-P1	Landfill Area	Annual	242.65	95.5 - 97.5*	147.15 - 145.15	BR
SHM-10-07	Landfill Area	Annual	246.82	40.0 - 50.0	206.82 - 196.82	OB (mid)
SHM-10-11	Landfill Area	Annual	263.76	50.0 - 60.0	213.76 - 203.76	OB (deep)
SHM-10-12	Landfill Area	Annual	255.17	45.0 - 55.0	210.17 - 200.17	OB (mid)
SHM-10-13	Landfill Area	Annual	244.77	60.0 - 70.0	184.77 - 174.77	OB (deep)
SHM-10-14	Landfill Area	Annual	237.62	60.0 - 80.0	177.62 - 157.62	OB (deep)
SHM-10-15	Landfill Area	Annual	243.68	45.0 - 55.0	198.68 - 188.68	OB (mid)
SHP-2016-07A	Landfill Area	Semiannual	265.30	22.0 - 32.0	243.30 - 233.30	BR
SHP-2016-07B	Landfill Area	Semiannual	265.33	70.0 - 80.0	195.33 - 185.33	BR
SHP-99-29X	Landfill Area	Annual	243.34	19.0 - 29.0	254.16 - 244.16	OB (shallow)
EPA-PZ-2012-1A	Nearfield Area	Semiannual	223.79	20.0 - 25.0	203.79 - 198.79	OB (shallow)
EPA-PZ-2012-1B	Nearfield Area	Semiannual	223.53	70.0 - 75.0	153.53 - 148.53	OB (deep)
EPA-PZ-2012-2A	Nearfield Area	Semiannual	223.38	20.0 - 25.0	203.38 - 198.38	OB (shallow)
EPA-PZ-2012-2B	Nearfield Area	Semiannual	223.37	75.0 - 80.0	148.37 - 143.47	OB (deep)
EPA-PZ-2012-3A	Nearfield Area	Semiannual	222.65	20.0 - 25.0	202.65 - 197.65	OB (shallow)
EPA-PZ-2012-3B	Nearfield Area	Semiannual	222.57	70.0 - 75.0	152.57 - 147.57	OB (deep)
EPA-PZ-2012-4A	Nearfield Area	Semiannual	226.60	20.0 - 25.0	206.60 - 201.60	OB (shallow)
EPA-PZ-2012-4B	Nearfield Area	Semiannual	226.39	70.0 - 75.0	156.39 - 151.39	OB (deep)
EPA-PZ-2012-5A	Nearfield Area	Semiannual	220.01	20.0 - 25.0	200.01 - 195.01	OB (shallow)
EPA-PZ-2012-5B	Nearfield Area	Semiannual	219.38	80.0 - 85.0	139.38 - 134.38	OB (deep)
EPA-PZ-2012-6A	Nearfield Area	Semiannual	234.25	25.0 - 30.0	209.25 - 204.25	OB (shallow)
EPA-PZ-2012-6B	Nearfield Area	Semiannual	234.08	75.0 - 80.0	159.08 - 154.08	OB (deep)
EPA-PZ-2012-7A	Nearfield Area	Semiannual	234.16	25.0 - 30.0	209.16 - 204.16	OB (shallow)

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Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
EPA-PZ-2012-7B	Nearfield Area	Semiannual	234.03	60.0 - 65.0	174.03 - 169.03	OB (deep)
EW-01	Nearfield Area	Semiannual	226.80	60.0 - 85.0	166.80 - 141.80	OB (deep)
EW-04	Nearfield Area	Semiannual	227.03	70.0 - 95.0	157.03 - 132.03	OB (deep)
SHL-22	Nearfield Area	Annual	219.58	105.0 - 115.0	114.58 - 104.58	OB (deep)/Till
SHL-23	Nearfield Area	Annual	241.29	23.0 - 33.0	218.29 - 208.29	OB (shallow)
SHL-5	Nearfield Area	Annual	217.60	3.0 - 13.0	214.60 - 204.60	OB (shallow)
SHL-8D	Nearfield Area	Annual	220.78	68.0 - 70.0	152.78 - 150.78	OB (deep)
SHL-8S	Nearfield Area	Annual	220.97	52.0 - 54.0	168.97 - 166.97	OB (shallow)
SHL-9	Nearfield Area	Annual	221.95	15.0 - 25.0	206.95 - 196.95	OB (shallow)
SHM-05-41A	Nearfield Area	Annual	222.48	42.0 - 44.0	180.48 - 178.48	OB (shallow)
SHM-05-41B	Nearfield Area	Semiannual	222.33	62.0 - 64.0	160.33 - 158.33	OB (mid)
SHM-05-41C	Nearfield Area	Semiannual	222.57	88.0 - 93.0	134.57 - 129.57	OB (deep)/Till
SHM-05-42A	Nearfield Area	Annual	216.81	40.0 - 42.0	176.81 - 174.81	OB (shallow)
SHM-05-42B	Nearfield Area	Annual	216.80	70.0 - 72.0	146.80 - 144.80	OB (mid)
SHM-10-06	Nearfield Area	Annual	232.91	69.5 - 79.5	163.41 - 153.41	OB (deep)
SHM-10-06A	Nearfield Area	Annual	248.54	77.0 - 87.0	171.54 - 161.54	OB (deep)
SHM-10-16	Nearfield Area	Annual	219.23	75.0 - 85.0	144.23 - 134.23	OB (deep)
SHM-93-22B	Nearfield Area	Semiannual	219.39	82.3 - 92.3	137.09 - 127.09	OB (mid)
SHM-93-22C	Nearfield Area	Annual	220.69	124.3 - 134.3	96.39 - 86.39	BR
SHM-96-5B	Nearfield Area	Semiannual	218.92	80.0 - 90.0	138.92 - 128.92	OB/Till
SHM-96-5C	Nearfield Area	Annual	218.39	50.0 - 60.0	168.39 - 158.39	OB (mid)
SHP-2016-06A	Nearfield Area	Semiannual	241.90	81.0 - 86.0	160.90 - 155.90	BR
SHP-2016-06B	Nearfield Area	Semiannual	241.89	102.0 - 112.0	139.89 - 129.89	BR
SHP-2016-06C	Nearfield Area	Semiannual	241.92	123.0 - 133.0	118.92 - 108.92	BR
SHP-2016-1A	Nearfield Area	Semiannual	227.27	13.9 - 23.0	213.37 - 204.27	OB (shallow)
SHP-2016-1B	Nearfield Area	Semiannual	227.24	75.0 - 85.0	152.24 - 142.24	OB (deep)
SHP-2016-2A	Nearfield Area	Semiannual	225.93	20.0 - 25.0	205.93 - 200.93	OB (shallow)
SHP-2016-2B	Nearfield Area	Semiannual	225.95	80.0 - 85.0	145.95 - 140.95	OB (deep)
SHP-2016-3A	Nearfield Area	Semiannual	223.18	20.0 - 25.0	203.18 - 198.18	OB (shallow)
SHP-2016-3B	Nearfield Area	Semiannual	223.18	80.0 - 85.0	143.18 - 138.18	OB (deep)
SHP-2016-4A	Nearfield Area	Semiannual	229.97	25.0 - 30.0	204.97 - 199.97	OB (shallow)
SHP-2016-4B	Nearfield Area	Semiannual	229.75	85.0 - 90.0	144.75 - 139.75	OB (deep)
SHP-2016-5A	Nearfield Area	Semiannual	227.01	25.0 - 30.0	202.01 - 197.01	OB (shallow)
SHP-2016-5B	Nearfield Area	Semiannual	226.95	85.0 - 90.0	141.95 - 136.95	OB (deep)
SHM-05-39A**	Northern Impact Area	Annual	221.53	37.0 - 39.0	184.53 - 182.53	OB (mid)
SHM-05-39B**	Northern Impact Area	Annual	221.51	66.0 - 68.0	155.51 - 153.51	OB (deep)
SHM-05-40X	Northern Impact Area	Semiannual	223.19	32.0 - 34.0	191.34 - 189.34	OB (mid)/Till
SHM-07-03	Northern Impact Area	Semiannual	227.90	25.0 - 35.0	202.90 - 192.90	OB (shallow)
SHM-07-05X	Northern Impact Area	Semiannual	223.40	56.0 - 66.0	167.40 - 157.40	OB (mid)
SHM-10-02	Northern Impact Area	Annual	223.03	53.0 - 63.0	170.03 - 160.03	OB (mid)
SHM-10-03	Northern Impact Area	Annual	232.05	58.5 - 68.5	173.55 - 163.55	OB (mid)
SHM-10-04	Northern Impact Area	Annual	212.61	55.0 - 65.0	157.61 - 147.61	OB (mid)
SHM-10-05A	Northern Impact Area	Annual	235.09	50.0 - 60.0	185.09 - 175.09	OB (mid)
SHM-10-08	Northern Impact Area	Annual	214.36	46.0 - 56.0	168.36 - 158.36	OB (deep)/Till

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SHM-10-10	Northern Impact Area	Annual	217.11	56.0 - 66.0	161.11 - 151.11	OB (deep)/Till
SHM-13-01	Northern Impact Area	Annual	208.08	39.0 - 49.0	169.08 - 159.08	OB (mid)
SHM-13-02	Northern Impact Area	Annual	218.72	60.0 - 70.0	158.72 - 148.72	OB (deep)
SHM-13-03	Northern Impact Area	Semiannual	212.05	42.0 - 52.0	170.05 - 160.05	OB (deep)/Till
SHM-13-04	Northern Impact Area	Semiannual	227.02	20.0 - 30.0	207.02 - 197.02	OB (shallow)
SHM-13-05	Northern Impact Area	Annual	225.14	75.0 - 85.0	150.14 - 140.14	OB (deep)
SHM-13-06	Northern Impact Area	Semiannual	223.89	36.0 - 46.0	187.89 - 177.89	OB (deep)
SHM-13-07	Northern Impact Area	Semiannual	225.64	27.0 - 37.0	198.64 - 188.64	Unknown
SHM-13-08	Northern Impact Area	Semiannual	227.90	55.0 - 65.0	172.90 - 162.90	OB (mid)/Till
SHM-13-14D	Northern Impact Area	Annual	210.48	45.0 - 55.0	165.68 - 155.68	OB (deep)
SHM-13-14S	Northern Impact Area	Annual	210.55	5.0 - 15.0	206.03 - 196.03	OB (shallow)
SHM-13-15	Northern Impact Area	Annual	210.58	50.0 - 60.0	160.58 - 150.58	OB (deep)
SHM-99-31A**	Northern Impact Area	Annual	214.34	4.0 - 14.0	210.34 - 200.34	OB (shallow)
SHM-99-31B**	Northern Impact Area	Annual	214.39	50.0 - 60.0	164.39 - 154.39	OB (mid)
SHM-99-31C	Northern Impact Area	Annual	214.60	68.0 - 78.0	146.60 - 136.60	OB (deep)
SHM-99-32X	Northern Impact Area	Annual	221.28	72.0 - 82.0	149.28 - 139.28	OB (deep)
SHL-12	Upgradient Area	Annual	248.62	15.0 - 30.0	233.62 - 218.62	OB
SHL-15	Upgradient Area	Annual	259.92	14.5 - 24.5	245.42 - 235.42	OB
SHL-24	Upgradient Area	Annual	238.75	110.0 - 120.0*	128.75 - 118.75	OB//Till/BR
SHL-7	Upgradient Area	Annual	236.33	11.0 - 21.0	225.33 - 215.33	OB
SHM-93-10D	Upgradient Area	Annual	248.01	46.0 - 56.0	202.01 - 192.01	BR
SHM-93-18B	Upgradient Area	Annual	237.31	78.5 - 88.5	158.81 - 148.81	OB
SHM-93-24A	Upgradient Area	Annual	238.42	13.2 - 23.2	225.22 - 215.22	OB

Notes:
TOR elevations from November 2017 Shepley's Hill Landfill (SHL) survey data (North American Vertical Datum [NAVD] 1988)
Locations compiled from the SHL LTMMMP Update (Sovereign Consulting, Inc. 2015) and LTMMMP Addendum (KOMAN Government Solutions, LLC 2018).
* Estimated value derived from Supplemental Groundwater Investigation (Harding ESE 2003).
** Location added to LTMMMP list in response to United States Environmental Protection Agency (USEPA) informal dispute resolution letter dated (USEPA 2016).

Acronyms and Abbreviations:
amsl = above mean sea level (NAVD 88)
bgs = below ground surface
BR = bedrock
LTMMMP = Long-Term Monitoring and Maintenance Plan
OB = overburden
TOR = top of riser

References:
Harding ESE. 2003. Shepley's Hill Landfill Supplemental Groundwater Investigation, Devens, Massachusetts. February.
KOMAN Government Solutions, LLC. 2018. Addendum to the Long-Term Monitoring and Maintenance Plan Update, Shepley's Hill Landfill, Landfill, Former Fort Devens Army Installation, Devens, MA. January 25.
Sovereign Consulting, Inc. 2015. Long-Term Monitoring and Maintenance Plan Update, Former Fort Devens Army Installation, Devens, Massachusetts. August.
USEPA. 2016. Former Fort Devens Installation – Dispute Resolution 2015 Devens Five Year Review (FYR) Report. February 24.

Table 3
LTMMP Hydraulic Monitoring Program
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
N1-P1	Barrier Wall	Annual	229.92	65.0 - 70.0	164.92 - 159.92	OB (deep)
N1-P2	Barrier Wall	Annual	229.93	40.0 - 45.0	189.93 - 184.93	OB (mid)
N1-P3	Barrier Wall	Annual	230.08	12.0 - 17.0	218.08 - 213.08	OB (shallow)
N2-P1	Barrier Wall	Annual	222.01	35.0 - 40.0	187.01 - 182.01	BR
N2-P2	Barrier Wall	Annual	222.16	4.0 - 9.0	218.16 - 213.16	OB (shallow)
N3-P1	Barrier Wall	Annual	220.83	33.0 - 35.0*	187.83 - 185.83	BR
N3-P2	Barrier Wall	Annual	220.84	4.0 - 9.0*	216.84 - 211.84	OB (shallow)
PZ-12-01	Barrier Wall	Semiannual	237.55	24.0 - 34.0	213.55 - 203.55	OB (shallow)
PZ-12-02	Barrier Wall	Semiannual	237.79	24.0 - 34.0	213.79 - 203.79	OB (shallow)
PZ-12-03	Barrier Wall	Semiannual	236.40	22.0 - 32.0	214.40 - 204.40	OB (shallow)
PZ-12-04	Barrier Wall	Semiannual	238.20	22.0 - 32.0	216.20 - 206.20	OB (shallow)
PZ-12-05	Barrier Wall	Semiannual	238.73	26.0 - 36.0	212.73 - 202.73	OB (mid)
PZ-12-06	Barrier Wall	Semiannual	242.18	26.0 - 36.0	216.18 - 206.18	OB (mid)
PZ-12-07	Barrier Wall	Semiannual	244.59	18.0 - 28.0	226.59 - 216.59	OB (mid)
PZ-12-08	Barrier Wall	Semiannual	244.83	18.0 - 28.0	226.83 - 216.83	OB (mid)
PZ-12-09	Barrier Wall	Semiannual	241.93	22.0 - 32.0	219.93 - 209.93	OB (shallow)
PZ-12-10	Barrier Wall	Semiannual	242.28	22.0 - 32.0	220.28 - 210.28	OB (shallow)
SHL-10	Barrier Wall	Annual	248.02	24.0 - 39.0	224.02 - 216.02	OB (shallow)
SHL-11	Barrier Wall	Annual	235.47	12.0 - 27.0	223.47 - 208.47	OB (shallow)
SHL-19	Barrier Wall	Annual	240.50	20.0 - 30.0	220.50 - 210.50	OB (shallow)
SHL-20	Barrier Wall	Annual	235.95	39.0 - 49.0	196.95 - 186.95	OB (deep)
SHL-3	Barrier Wall	Annual	246.95	24.0 - 34.0	222.95 - 212.95	OB (mid)
SHL-4	Barrier Wall	Annual	227.48	3.0 - 13.0	224.48 - 214.48	OB (shallow)
SHM-11-02	Barrier Wall	Annual	240.73	39.0 - 49.0	201.73 - 191.73	BR
SHM-11-06	Barrier Wall	Annual	236.17	25.0 - 35.0	211.17 - 201.17	OB (shallow)
SHM-11-07	Barrier Wall	Annual	240.83	41.0 - 46.0	199.83 - 194.83	BR
SHM-93-10D	Barrier Wall	Annual	248.01	46.0 - 56.0	202.01 - 192.01	BR
SHP-01-36X	Barrier Wall	Annual	223.95	3.0 - 8.0	220.95 - 215.95	OB (shallow)
SHP-01-37X	Barrier Wall	Annual	222.79	1.0 - 6.0	221.79 - 216.79	OB (shallow)
SHP-01-38A	Barrier Wall	Annual	220.86	1.5 - 6.5	219.36 - 214.36	OB (shallow)
SHP-01-38B	Barrier Wall	Annual	221.03	18.0 - 23.0	203.03 - 198.03	OB (deep)
SHP-05-43	Barrier Wall	Annual	260.17	50.5 - 60.5	209.67 - 199.67	OB (shallow)
SHP-05-44	Barrier Wall	Annual	258.55	51.0 - 61.0	207.55 - 197.55	OB (mid)
RSK-15	Barrier Wall	***	225.54	9.85 - 14.85	215.69 - 210.69	OB (shallow)
RSK-19	Barrier Wall	***	218.76	4.98 - 9.98	213.78 - 208.78	OB (shallow)
RSK-25	Barrier Wall	***	239.21	20.68 - 25.68	218.53 - 213.53	OB (shallow)
RSK-27	Barrier Wall	***	241.45	21.22 - 26.22	220.23 - 215.23	OB (shallow)
RSK-28	Barrier Wall	***	239.24	21.40 - 26.40	217.84 - 212.84	OB (shallow)
RSK-32	Barrier Wall	***	236.91	21.04 - 26.04	215.87 - 210.87	OB (shallow)
RSK-34	Barrier Wall	***	233.16	18.61 - 23.61	214.55 - 209.55	OB (shallow)
RSK-35	Barrier Wall	***	233.64	22.65 - 26.65	210.99 - 206.99	OB (shallow)
RSK-37	Barrier Wall	***	220.55	33.91 - 38.91	186.64 - 181.64	OB (shallow)
RSK-7	Barrier Wall	***	222.01	5.45 - 10.45	216.56 - 211.56	OB (shallow)

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Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
3-2	Shepley's Hill	***	268.20	55.92 - 59.92	212.58 - 208.58	BR
20-1	Shepley's Hill	***	278.52	40.74 - 56.44	237.78 - 222.08	BR
27-1	Shepley's Hill	***	270.66	60.82 - 65.82	209.84 - 204.84	BR
27-2	Shepley's Hill	***	275.15	60.08 - 70.08	215.07 - 205.07	BR
CAP-2B	Shepley's Hill	***	250.21	53.55 -58.55	196.66 - 191.66	BR
CH-1D	Shepley's Hill	***	250.59	87.13 - 97.13	163.46 - 153.46	BR
CH-1S	Shepley's Hill	***	250.63	38.17 - 43.17	212.46 - 207.46	BR
MW-1	Shepley's Hill	***	251.84	6.58 - 8.58 **	245.28 - 243.28	OB
MW-11A	Shepley's Hill	***	258.57	4.18 - 6.18 **	254.39 - 252.39	OB
MW-14	Shepley's Hill	***	256.61	5.14 - 7.14 **	251.47 - 249.17	OB
MW-16	Shepley's Hill	***	270.23	5.18 - 7.18 **	265.05 - 263.05	OB
MW-22	Shepley's Hill	***	267.64	4.70 - 6.70 **	262.94 - 260.94	OB
MW-4-1	Shepley's Hill	***	247.33	3.72 - 5.72 **	243.61 - 241.61	OB
MW-7	Shepley's Hill	***	249.10	6.98 - 8.98 **	242.12 - 240.12	OB
MW-9	Shepley's Hill	***	243.91	7.65 - 9.65 **	236.26 - 234.26	OB
Q4-1	Shepley's Hill	***	268.38	32.18 - 42.18	236.20 - 226.20	BR
Q5-1	Shepley's Hill	***	260.99	50.67 - 53.67	210.32 - 207.32	BR
32M-01-14XBR	Upgradient/AOC 32	***	256.06	35.80 - 45.80	220.26 - 210.26	BR
32M-01-14XOB	Upgradient/AOC 32	***	256.56	17.30 - 27.30	239.26 - 229.26	OB
32M-01-15XBR	Upgradient/AOC 32	***	257.70	34.50 - 44.50	223.20 - 213.20	BR
32M-01-16XBR	Upgradient/AOC 32	***	257.50	21.00 - 31.00	236.50 - 226.50	BR
32M-92-01X	Upgradient/AOC 32	***	260.17	13.00 - 23.00	247.17 - 237.17	OB
32Z-01-07XOB	Upgradient/AOC 32	***	259.48	12.70 - 22.70	246.78 - 236.78	OB
SHL-25	Upgradient/AOC 32	***	258.01	25.23 - 35.23	232.78 - 222.78	OB
N5-P1	Landfill Area	Annual	242.65	95.5 - 97.5	147.15 - 145.15	BR
N5-P2	Landfill Area	Annual	242.69	23.0 - 28.0*	219.69 - 214.69	BR
N6-P1	Landfill Area	Annual	259.02	85.5 - 87.5*	173.52 - 171.52	BR
N7-P1	Landfill Area	Annual	255.59	66.0 - 68.0*	189.59 - 187.59	BR
N7-P2	Landfill Area	Annual	256.04	29.0 - 34.0*	227.04 - 222.04	OB
SHL-18	Landfill Area	Annual	237.56	16.0 - 26.0	221.56 - 211.56	OB
SHM-10-07	Landfill Area	Annual	246.82	40.0 - 50.0	206.82 - 196.82	OB (mid)
SHM-10-11	Landfill Area	Annual	263.76	50.0 - 60.0	213.76 - 203.76	OB (deep)
SHM-10-12	Landfill Area	Annual	255.17	45.0 - 55.0	210.17 - 200.17	OB (mid)
SHM-10-13	Landfill Area	Annual	244.77	60.0 - 70.0	184.77 - 174.77	OB (deep)
SHM-10-14	Landfill Area	Annual	237.62	60.0 - 80.0	177.62 - 157.62	OB (deep)
SHM-10-15	Landfill Area	Annual	243.68	45.0 - 55.0	198.68 - 188.68	OB (mid)
SHM-93-18B	Landfill Area	Annual	237.31	78.5 - 88.5	158.81 - 148.81	OB
SHP-2016-07A	Landfill Area	Semiannual	265.30	22.0 - 32.0	243.30 - 233.30	BR
SHP-2016-07B	Landfill Area	Semiannual	265.33	70.0 - 80.0	195.33 - 185.33	BR
SHP-95-27X	Landfill Area	Annual	237.45	30.5 - 40.5	206.95 - 196.95	OB
SHP-99-01C	Landfill Area	Annual	274.15	19.7 - 29.7	254.45 - 244.45	BR
SHP-99-29X	Landfill Area	Annual	243.34	19.0 - 29.0	254.16 - 244.16	OB (shallow)
SHP-99-35X	Landfill Area	Annual	258.49	30.2 - 40.2	228.29 - 218.29	OB (shallow)

Table 3
LTMMP Hydraulic Monitoring Program
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
EPA-PZ-2012-1A	Nearfield Area	Semiannual	223.79	20.0 - 25.0	203.79 - 198.79	OB (shallow)
EPA-PZ-2012-1B	Nearfield Area	Semiannual	223.53	70.0 - 75.0	153.53 - 148.53	OB (deep)
EPA-PZ-2012-2A	Nearfield Area	Semiannual	223.38	20.0 - 25.0	203.38 - 198.38	OB (shallow)
EPA-PZ-2012-2B	Nearfield Area	Semiannual	223.37	75.0 - 80.0	148.37 - 143.47	OB (deep)
EPA-PZ-2012-3A	Nearfield Area	Semiannual	222.65	20.0 - 25.0	202.65 - 197.65	OB (shallow)
EPA-PZ-2012-3B	Nearfield Area	Semiannual	222.57	70.0 - 75.0	152.57 - 147.57	OB (deep)
EPA-PZ-2012-4A	Nearfield Area	Semiannual	226.60	20.0 - 25.0	206.60 - 201.60	OB (shallow)
EPA-PZ-2012-4B	Nearfield Area	Semiannual	226.39	70.0 - 75.0	156.39 - 151.39	OB (deep)
EPA-PZ-2012-5A	Nearfield Area	Semiannual	220.01	20.0 - 25.0	200.01 - 195.01	OB (shallow)
EPA-PZ-2012-5B	Nearfield Area	Semiannual	219.38	80.0 - 85.0	139.38 - 134.38	OB (deep)
EPA-PZ-2012-6A	Nearfield Area	Semiannual	234.25	25.0 - 30.0	209.25 - 204.25	OB (shallow)
EPA-PZ-2012-6B	Nearfield Area	Semiannual	234.08	75.0 - 80.0	159.08 - 154.08	OB (deep)
EPA-PZ-2012-7A	Nearfield Area	Semiannual	234.16	25.0 - 30.0	209.16 - 204.16	OB (shallow)
EPA-PZ-2012-7B	Nearfield Area	Semiannual	234.03	60.0 - 65.0	174.03 - 169.03	OB (deep)
SHL-13	Nearfield Area	Annual	220.71	5.0 - 20.0	215.71 - 200.71	OB (shallow)
SHL-22	Nearfield Area	Annual	219.58	105.0 - 115.0	114.58 - 104.58	OB (deep)/Till
SHL-23	Nearfield Area	Annual	241.29	23.0 - 33.0	218.29 - 208.29	OB
SHL-5	Nearfield Area	Annual	217.60	3.0 - 13.0	214.60 - 204.60	OB (shallow)
SHL-8D	Nearfield Area	Annual	220.78	68.0 - 70.0	152.78 - 150.78	OB (deep)
SHL-8S	Nearfield Area	Annual	220.97	52.0 - 54.0	168.97 - 166.97	OB (shallow)
SHL-9	Nearfield Area	Annual	221.95	15.0 - 25.0	206.95 - 196.95	OB (shallow)
SHM-05-41A	Nearfield Area	Annual	222.48	42.0 - 44.0	180.48 - 178.48	OB (shallow)
SHM-05-41B	Nearfield Area	Annual	222.33	62.0 - 64.0	160.33 - 158.33	OB (mid)
SHM-05-41C	Nearfield Area	Annual	222.57	88.0 - 93.0	134.57 - 129.57	OB (deep)/Till
SHM-05-42A	Nearfield Area	Annual	216.81	40.0 - 42.0	176.81 - 174.81	OB (shallow)
SHM-05-42B	Nearfield Area	Annual	216.80	70.0 - 72.0	146.80 - 144.80	OB (mid)
SHM-10-06	Nearfield Area	Annual	232.91	69.5 - 79.5	163.41 - 153.41	OB (deep)
SHM-10-06A	Nearfield Area	Annual	248.54	77.0 - 87.0	171.54 - 161.54	OB (deep)
SHM-10-16	Nearfield Area	Annual	219.23	75.0 - 85.0	144.23 - 134.23	OB (deep)
SHM-93-22B	Nearfield Area	Annual	219.39	82.3 - 92.3	137.09 - 127.09	OB (mid)
SHM-93-22C	Nearfield Area	Annual	220.69	124.3 - 134.3	96.39 - 86.39	BR
SHM-96-5B	Nearfield Area	Annual	218.92	80.0 - 90.0	138.92 - 128.92	OB
SHM-96-5C	Nearfield Area	Annual	218.39	50.0 - 60.0	168.39 - 158.39	OB (mid)
SHP-05-45A	Nearfield Area	Annual	228.48	20.0 - 25.0	208.48 - 203.48	OB (shallow)
SHP-05-45B	Nearfield Area	Annual	229.11	65.0 - 75.0	164.11 - 154.11	OB (mid)
SHP-05-46A	Nearfield Area	Annual	228.18	20.0 - 25.0	208.18 - 203.18	OB (mid)
SHP-05-46B	Nearfield Area	Annual	227.60	65.0 - 75.0	162.60 - 152.60	OB (shallow)
SHP-05-47A	Nearfield Area	Annual	217.39	1.0 - 2.0	216.39 - 215.39	OB (shallow)
SHP-05-47B	Nearfield Area	Annual	215.40	3.0 - 4.0	212.40 - 211.40	OB (shallow)
SHP-2016-06A	Nearfield Area	Semiannual	241.90	81.0 - 86.0	160.90 - 155.90	BR
SHP-2016-06B	Nearfield Area	Semiannual	241.89	102.0 - 112.0	139.89 - 129.89	BR
SHP-2016-06C	Nearfield Area	Semiannual	241.92	123.0 - 133.0	118.92 - 108.92	BR
SHP-2016-1A	Nearfield Area	Semiannual	227.27	13.9 - 23.0	213.37 - 204.27	OB (shallow)

Table 3
LTMMP Hydraulic Monitoring Program
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
SHP-2016-1B	Nearfield Area	Semiannual	227.24	75.0 - 85.0	152.24 - 142.24	OB (deep)
SHP-2016-2A	Nearfield Area	Semiannual	225.93	20.0 - 25.0	205.93 - 200.93	OB (shallow)
SHP-2016-2B	Nearfield Area	Semiannual	225.95	80.0 - 85.0	145.95 - 140.95	OB (deep)
SHP-2016-3A	Nearfield Area	Semiannual	223.18	20.0 - 25.0	203.18 - 198.18	OB (shallow)
SHP-2016-3B	Nearfield Area	Semiannual	223.18	80.0 - 85.0	143.18 - 138.18	OB (deep)
SHP-2016-4A	Nearfield Area	Semiannual	229.97	25.0 - 30.0	204.97 - 199.97	OB (shallow)
SHP-2016-4B	Nearfield Area	Semiannual	229.75	85.0 - 90.0	144.75 - 139.75	OB (deep)
SHP-2016-5A	Nearfield Area	Semiannual	227.01	25.0 - 30.0	202.01 - 197.01	OB (shallow)
SHP-2016-5B	Nearfield Area	Semiannual	226.95	85.0 - 90.0	141.95 - 136.95	OB (deep)
SHP-2017-01	Nearfield Area	Semiannual	229.63	74.0 - 79.0	155.63 - 150.63	OB
SHP-2017-02	Nearfield Area	Semiannual	230.05	89.5 - 94.5	140.55 - 135.55	Overburden
SHM-05-39A	Northern Impact Area	Annual	221.53	37.0 - 39.0	184.53 - 182.53	OB (mid)
SHM-05-39B	Northern Impact Area	Annual	221.51	66.0 - 68.0	155.51 - 153.51	OB (deep)
SHM-05-40X	Northern Impact Area	Semiannual	223.34	32.0 - 34.0	191.34 - 189.34	OB (mid)/Till
SHM-07-03	Northern Impact Area	Semiannual	227.90	25.0 - 35.0	202.90 - 192.90	OB (shallow)
SHM-07-05X	Northern Impact Area	Semiannual	223.40	56.0 - 66.0	167.40 - 157.40	BR
SHM-10-01	Northern Impact Area	Annual	209.65	60.5 - 70.5	149.15 - 139.15	OB (deep)/Till
SHM-10-02	Northern Impact Area	Annual	223.03	53.0 - 63.0	170.03 - 160.03	OB (mid)
SHM-10-03	Northern Impact Area	Annual	232.05	58.5 - 68.5	173.55 - 163.55	OB (mid)
SHM-10-04	Northern Impact Area	Annual	212.61	55.0 - 65.0	157.61 - 147.61	OB (mid)
SHM-10-05A	Northern Impact Area	Annual	235.09	50.0 - 60.0	185.09 - 175.09	OB (mid)
SHM-10-08	Northern Impact Area	Annual	214.36	46.0 - 56.0	168.36 - 158.36	OB (deep)/Till
SHM-10-10	Northern Impact Area	Annual	217.11	56.0 - 66.0	161.11 - 151.11	OB (deep)/Till
SHM-13-01	Northern Impact Area	Annual	208.08	39.0 - 49.0	169.08 - 159.08	OB (mid)
SHM-13-02	Northern Impact Area	Annual	218.72	60.0 - 70.0	158.72 - 148.72	OB (deep)
SHM-13-03	Northern Impact Area	Semiannual	212.05	42.0 - 52.0	170.05 - 160.05	OB (deep)/Till
SHM-13-04	Northern Impact Area	Semiannual	227.02	20.0 - 30.0	207.02 - 197.02	OB (shallow)
SHM-13-05	Northern Impact Area	Annual	225.14	75.0 - 85.0	150.14 - 140.14	OB (deep)
SHM-13-06	Northern Impact Area	Semiannual	223.89	36.0 - 46.0	187.89 - 177.89	OB (deep)/Till
SHM-13-07	Northern Impact Area	Semiannual	225.64	27.0 - 37.0	198.64 - 188.64	Unknown
SHM-13-08	Northern Impact Area	Semiannual	227.90	55.0 - 65.0	172.90 - 162.90	OB (mid)/Till
SHM-13-14D	Northern Impact Area	Annual	210.68	45.0 - 55.0	165.68 - 155.68	OB (deep)
SHM-13-14S	Northern Impact Area	Annual	211.03	5.0 - 15.0	206.03 - 196.03	OB (shallow)
SHM-13-15	Northern Impact Area	Annual	210.58	50.0 - 60.0	160.58 - 150.58	OB (deep)
SHM-99-31A	Northern Impact Area	Annual	214.34	4.0 - 14.0	210.34 - 200.34	OB (shallow)
SHM-99-31B	Northern Impact Area	Annual	214.39	50.0 - 60.0	164.39 - 154.39	OB (mid)
SHM-99-31C	Northern Impact Area	Annual	214.60	68.0 - 78.0	146.60 - 136.60	OB (deep)
SHM-99-32X	Northern Impact Area	Annual	221.28	72.0 - 82.0	149.28 - 139.28	OB (deep)
SHM-99-34B	Northern Impact Area	Annual	224.91	74.5-79.5	150.40 - 145.40	OB (deep)
SHP-05-48A	Northern Impact Area	Annual	217.31	1.0 - 2.0	216.31 - 215.31	OB (shallow)
SHP-05-48B	Northern Impact Area	Annual	215.96	2.0 - 3.0	213.96 - 212.96	OB (shallow)
SHP-05-49A	Northern Impact Area	Annual	216.67	1.0 - 2.0	215.67 - 214.67	OB (shallow)
SHP-05-49B	Northern Impact Area	Annual	215.14	2.5 - 3.5	212.64 - 211.64	OB (shallow)

Table 3
LTMMMP Hydraulic Monitoring Program
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Well ID	Location	Monitoring Frequency	TOR Elevation (feet NAVD88)	Screen Interval (feet bgs)	Screen Elevation (feet NAVD88)	Formation Type at Screen Interval
PSP-01	Surface Water	Annual	218.14	NA	NA	Staff Gauge
SHSG-13-01G	Surface Water	Annual	205.53	NA	NA	Staff Gauge
SHSG-13-02G	Surface Water	Annual	208.25	NA	NA	Staff Gauge
SHSG-13-03G	Surface Water	Annual	209.99	NA	NA	Staff Gauge
SHSG-14-01G	Surface Water	Annual	213.71	NA	NA	Staff Gauge
SHL-12	Upgradient Area	Annual	248.62	15.0 - 30.0	233.62 - 218.62	OB
SHL-15	Upgradient Area	Annual	259.92	14.5 - 24.5	245.42 - 235.42	OB
SHL-17	Upgradient Area	Annual	233.79	6.0 - 16.0	227.79 - 217.79	OB
SHL-24	Upgradient Area	Annual	238.75	110.0 - 120.0*	128.75 - 118.75	OB/Till/BR
SHL-7	Upgradient Area	Annual	236.33	11.0 - 21.0	225.33 - 215.33	OB
SHM-93-24A	Upgradient Area	Annual	238.42	13.2 - 23.2	225.22 - 215.22	OB

Notes:

TOR elevations from November 2017 Shepley's Hill Landfill (SHL) survey data (North American Vertical Datum [NAVD] 1988)

Locations compiled from the SHL LTMMMP Update (Sovereign Consulting, Inc. 2015) and LTMMMP Addendum (KOMAN Government Solutions, LLC 2018).

* Estimated value derived from Supplemental Groundwater Investigation (Harding ESE 2003).

**Screen interval approximated based on soil boring depth and measured well depth (no well construction log).

*** Well location not part of LTMMMP; groundwater levels collected to support contour maps and barrier wall analysis.

Acronyms and Abbreviations:

amsl = above mean sea level (NAVD 88)

bgs = below ground surface

BR = bedrock

LTMMMP = Long-Term Monitoring and Maintenance Plan

NA = not applicable

OB = overburden

TOR = top of riser

References:

Harding ESE. 2003. Shepley's Hill Landfill Supplemental Groundwater Investigation, Devens, Massachusetts. February.

KOMAN Government Solutions, LLC. 2018. Addendum to the Long-Term Monitoring and Maintenance Plan Update, Shepley's Hill Landfill, Former Fort Devens Army Installation, Devens, MA. January 25.

Sovereign Consulting, Inc. 2015. Long-Term Monitoring and Maintenance Plan Update, Former Fort Devens Army Installation, Devens, Massachusetts. August.

Table 4
Hydraulic Monitoring Data for Spring and Fall 2020
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Location	Well Identification	Depth to Water (ft bmp) 5/18/2020	Groundwater Elevation (ft NAVD88) 5/18/2020	Depth to Water (ft bmp) 11/4/2020	Groundwater Elevation (ft NAVD88) 11/4/2020	Screen Interval (ft bmp)	Formation Type	Measurement Included on Contour Maps (Y/N)?
Barrier Wall	N1-P1	--	--	14.85	215.07	67.14 - 72.14	OB (deep)	N; deep OB paired well
Barrier Wall	N1-P2	--	--	14.28	215.65	42.15 - 47.15	OB (mid)	N; deep OB paired well
Barrier Wall	N1-P3	--	--	13.71	216.37	14.30 - 19.30	OB (shallow)	Y
Barrier Wall	N2-P1	--	--	5.24	216.77	36.46 - 41.46	BR	N; bedrock well
Barrier Wall	N2-P2	--	--	5.26	216.90	5.61 - 10.61	OB (shallow)	Y
Barrier Wall	N3-P1	--	--	4.86	215.97	35.02 - 37.02	BR	N; bedrock well
Barrier Wall	N3-P2	--	--	4.14	216.70	6.03 - 11.03	OB (shallow)	Y
Barrier Wall	PZ-12-01	20.20	217.35	20.80	216.75	27.70 - 37.70	OB (shallow)	Y
Barrier Wall	PZ-12-02	19.29	218.50	20.81	216.98	28.04 - 38.04	OB (shallow)	Y
Barrier Wall	PZ-12-03	19.36	217.04	19.55	216.85	27.55 - 37.55	OB (shallow)	Y
Barrier Wall	PZ-12-04	18.73	219.47	20.71	217.49	27.15 - 37.15	OB (shallow)	Y
Barrier Wall	PZ-12-05	21.10	217.63	21.78	216.95	28.65 - 38.65	OB (mid)	Y
Barrier Wall	PZ-12-06	22.46	219.72	24.44	217.74	28.76 - 38.76	OB (mid)	Y
Barrier Wall	PZ-12-07	27.35	217.24	27.75	216.84	23.79 - 33.79	OB (mid)	Y
Barrier Wall	PZ-12-08	23.88	220.95	27.35 ⁴	217.48	21.09 - 35.09	OB (mid)	Y
Barrier Wall	PZ-12-09	23.29	218.64	24.60	217.33	23.50 - 33.50	OB (shallow)	Y
Barrier Wall	PZ-12-10	21.02	221.26	23.45	218.83	23.30 - 33.30	OB (shallow)	Y
Barrier Wall	RSK-15	--	--	8.73	216.81	9.85 - 14.85	OB (shallow)	Y
Barrier Wall	RSK-19	--	--	1.99	216.77	4.98 - 9.98	OB (shallow)	Y
Barrier Wall	RSK-25	--	--	--	--	20.68 - 25.68	OB (shallow)	N; well not located and presumed to be destroyed
Barrier Wall	RSK-27	--	--	23.55	217.90	21.22 - 26.22	OB (shallow)	Y
Barrier Wall	RSK-28	--	--	21.66	217.58	21.40 - 26.40	OB (shallow)	Y
Barrier Wall	RSK-32	--	--	19.41	217.50	21.04 - 26.04	OB (shallow)	Y
Barrier Wall	RSK-34	--	--	--	--	18.61 - 23.61	OB (shallow)	N; well not located and presumed to be destroyed
Barrier Wall	RSK-35	--	--	17.76	215.88	22.65 - 26.65	OB (shallow)	Y
Barrier Wall	RSK-37	--	--	3.97	216.58	33.91 - 38.91	OB (shallow)	Y
Barrier Wall	RSK-7	--	--	5.24	216.77	5.45 - 10.45	OB (shallow)	Y
Barrier Wall	SHL-10	30.67	217.35	31.20	216.82	25.40 - 40.40	OB (shallow)	Y
Barrier Wall	SHL-11	18.36	217.11	18.67	216.80	13.52 - 28.52	OB (shallow)	Y
Barrier Wall	SHL-19	23.15	217.35	22.68	217.82	21.91 - 31.91	OB (shallow)	Y
Barrier Wall	SHL-20	17.11	218.84	18.80	217.15	40.23 - 50.23	OB (deep)	Y
Barrier Wall	SHL-3	--	--	30.55	216.40	25.15 - 35.15	OB (mid)	Y
Barrier Wall	SHL-4	10.13	217.35	10.68	216.80	4.40 - 14.40	OB (shallow)	Y
Barrier Wall	SHM-11-02	21.55	219.18	23.90	216.83	41.07 - 51.07 *	BR	N; bedrock well
Barrier Wall	SHM-11-06	18.97	217.20	20.75	215.42	27.84 - 37.84	OB (shallow)	Y
Barrier Wall	SHM-11-07	--	--	23.24	217.59	43.61 - 48.61	BR	N; bedrock well
Barrier Wall	SHP-01-36X	7.56 ¹	216.39	7.35	216.60	6.96 - 11.98	OB (shallow)	Y
Barrier Wall	SHP-01-37X	6.36 ¹	216.43	6.04	216.75	5.12 - 10.12	OB (shallow)	Y
Barrier Wall	SHP-01-38A	3.59	217.27	3.96	216.90	3.59 - 8.59	OB (shallow)	Y
Barrier Wall	SHP-01-38B	--	--	4.08	216.95	20.15 - 25.15	OB (deep)	N; deep OB paired well
Barrier Wall	SHP-05-43	--	--	45.61	214.56	52.29 - 62.29	OB (shallow)	Y
Barrier Wall	SHP-05-44	--	--	42.19	216.36	53.99 - 63.99	OB (mid)	Y
Landfill Area	N5-P1	--	--	24.70	217.95	97.69 - 99.69	BR	N; bedrock well
Landfill Area	N5-P2	--	--	24.80	217.89	25.23 - 30.23	BR	N; bedrock well
Landfill Area	N6-P1	--	--	37.52	221.08	88.39 - 90.39	BR	N; bedrock well
Landfill Area	N7-P1	--	--	32.00	223.59	68.41 - 70.41	BR	N; bedrock well
Landfill Area	N7-P2	--	--	32.10	223.94	31.86 - 36.86	OB	Y
Landfill Area	SHL-18	--	--	19.55	218.01	7.89 - 27.89	OB	Y
Landfill Area	SHM-10-07	--	--	27.85	218.97	41.84 - 51.84	OB (mid)	Y

Table 4
Hydraulic Monitoring Data for Spring and Fall 2020
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Location	Well Identification	Depth to Water (ft bmp) 5/18/2020	Groundwater Elevation (ft NAVD88) 5/18/2020	Depth to Water (ft bmp) 11/4/2020	Groundwater Elevation (ft NAVD88) 11/4/2020	Screen Interval (ft bmp)	Formation Type	Measurement Included on Contour Maps (Y/N)?
Landfill Area	SHM-10-11	--	--	41.24	222.52	52.60 - 62.60	OB (deep)	Y
Landfill Area	SHM-10-12	--	--	34.70	220.47	47.60 - 57.60	OB (mid)	Y
Landfill Area	SHM-10-13	--	--	26.80	217.97	63.26 - 73.26	OB (deep)	Y
Landfill Area	SHM-10-14	--	--	21.11 ⁵	216.51	62.82 - 82.82	OB (deep)	Y
Landfill Area	SHM-10-15	--	--	25.30	218.38	46.73 - 56.73	OB (mid)	Y
Landfill Area	SHP-2016-07A	14.91	250.39	31.46	233.84	24.32 - 34.32	BR	N; bedrock well
Landfill Area	SHP-2016-07B	21.74	243.59	35.54	229.79	72.35 - 82.35	BR	N; bedrock well
Landfill Area	SHP-95-27X	--	--	31.90	205.55	32.64 - 42.64	OB	Y
Landfill Area	SHP-99-01C	--	--	24.95	249.20	21.69 - 31.69	BR	N; bedrock well
Landfill Area	SHP-99-29X	--	--	25.85	217.49	20.88 - 30.88	OB (shallow)	Y
Landfill Area	SHP-99-35X	--	--	36.80	221.43	31.96 - 41.96	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-1A	10.38	213.41	12.27	211.52	23.88 - 28.88	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-1B	10.09	213.44	11.93	211.60	23.72 - 78.72	OB (deep)	N; deep OB paired well
Nearfield Area	EPA-PZ-2012-2A	9.94	213.44	11.51	211.87	23.66 - 28.66	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-2B	9.98	213.39	11.51	211.86	78.62 - 83.62	OB (deep)	N; deep OB paired well
Nearfield Area	EPA-PZ-2012-3A	9.81	212.84	11.76	210.89	23.45 - 28.45	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-3B	9.68	212.89	11.70	210.87	73.32 - 78.32	OB (deep)	N; deep OB paired well
Nearfield Area	EPA-PZ-2012-4A	13.94	212.66	16.00	210.60	23.30 - 28.30	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-4B	13.85	212.54	15.90	210.49	72.88 - 77.88	OB (deep)	N; deep OB paired well
Nearfield Area	EPA-PZ-2012-5A	7.42 ²	212.59	9.05	210.96	23.68 - 28.68	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-5B	6.63	212.75	8.32	211.06	83.18 - 88.18	OB (deep)	N; deep OB paired well
Nearfield Area	EPA-PZ-2012-6A	21.49	212.76	23.70	210.55	28.54 - 33.54	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-6B	21.39	212.69	23.63	210.45	78.23 - 83.23	OB (deep)	N; deep OB paired well
Nearfield Area	EPA-PZ-2012-7A	21.32	212.84	23.58	210.58	24.74 - 29.74	OB (shallow)	Y
Nearfield Area	EPA-PZ-2012-7B	21.37	212.66	23.45	210.58	59.75 - 64.75	OB (deep)	N; deep OB paired well
Nearfield Area	SHL-13	--	--	7.17	213.54	6.73 - 21.73	OB (shallow)	Y
Nearfield Area	SHL-22	--	--	9.15 ³	210.43	105.68 - 115.68	OB (deep)/Till	N; screened into till
Nearfield Area	SHL-23	--	--	30.36	210.93	24.85 - 34.85	OB	Y
Nearfield Area	SHL-5	--	--	6.55	211.05	3.70 - 13.70	OB (deep)	Y
Nearfield Area	SHL-8D	--	--	8.40	212.38	70.95 - 72.95	OB (deep)	N; deep OB paired well
Nearfield Area	SHL-8S	--	--	8.56	212.41	54.14 - 56.14	OB (shallow)	Y
Nearfield Area	SHL-9	--	--	11.74	210.21	16.23 - 26.23	OB (shallow)	Y
Nearfield Area	SHM-05-41A	--	--	12.01	210.47	41.76 - 43.76	OB (shallow)	Y
Nearfield Area	SHM-05-41B	9.96	212.37	11.68	210.65	61.83 - 63.83	OB (mid)	N; deep OB paired well
Nearfield Area	SHM-05-41C	10.31	212.26	12.12	210.45	97.66 - 92.66	OB (deep)	N; deep OB paired well
Nearfield Area	SHM-05-42A	--	--	5.90	210.91	43.16 - 45.16	OB (shallow)	Y
Nearfield Area	SHM-05-42B	--	--	6.00	210.80	73.15 - 75.15	OB (mid)	N; deep OB paired well
Nearfield Area	SHM-10-06	--	--	20.31	212.60	72.38 - 82.38	OB (deep)	Y
Nearfield Area	SHM-10-06A	--	--	36.11	212.43	79.58 - 89.58	OB (deep)	Y
Nearfield Area	SHM-10-16	--	--	8.63	210.60	77.51 - 87.51	OB (deep)	Y
Nearfield Area	SHM-93-22B	6.67	212.72	9.73	209.66	82.55 - 92.55	OB (mid)	Y
Nearfield Area	SHM-93-22C	--	--	11.35	209.34	126.07 - 136.07	BR	N; bedrock well
Nearfield Area	SHM-96-5B	5.79	213.13	7.63	211.29	81.54 - 91.54	OB (deep)/Till	N; deep OB paired well
Nearfield Area	SHM-96-5C	--	--	7.08	211.31	51.0 - 61.0	OB (mid)	Y
Nearfield Area	SHP-05-45A	--	--	17.90	210.58	22.16 - 27.16	OB (shallow)	Y
Nearfield Area	SHP-05-45B	--	--	18.31	210.80	67.39 - 77.39	OB (mid)	N; deep OB paired well
Nearfield Area	SHP-05-46A	--	--	17.11	211.07	21.87 - 26.87	OB (mid)	Y
Nearfield Area	SHP-05-46B	--	--	16.38	211.22	66.57 - 76.57	OB (shallow)	Y
Nearfield Area	SHP-05-47A	--	--	3.54	213.85	5.04 - 6.04	OB (shallow)	Y

Table 4
Hydraulic Monitoring Data for Spring and Fall 2020
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Location	Well Identification	Depth to Water (ft bmp) 5/18/2020	Groundwater Elevation (ft NAVD88) 5/18/2020	Depth to Water (ft bmp) 11/4/2020	Groundwater Elevation (ft NAVD88) 11/4/2020	Screen Interval (ft bmp)	Formation Type	Measurement Included on Contour Maps (Y/N)?
Nearfield Area	SHP-05-47B	--	--	2.28	213.12	5.07 - 6.07	OB (shallow)	N; deep OB paired well
Nearfield Area	SHP-2016-06A	26.31	215.59	29.98	211.92	82.85 - 87.85	BR	N; bedrock well
Nearfield Area	SHP-2016-06B	19.68	222.21	24.65	217.24	103.84 - 113.84	BR	N; bedrock well
Nearfield Area	SHP-2016-06C	19.74	222.18	24.35	217.57	124.87 - 134.87	BR	N; bedrock well
Nearfield Area	SHP-2016-1A	14.30	212.97	16.62	210.65	15.59 - 25.59	OB (shallow)	Y
Nearfield Area	SHP-2016-1B	16.19	211.05	18.00 ⁴	209.24	77.56 - 87.56	OB (deep)	N; deep OB paired well
Nearfield Area	SHP-2016-2A	14.37 ¹	211.56	15.28	210.65	22.20 - 27.20	OB (shallow)	Y
Nearfield Area	SHP-2016-2B	13.35	212.60	15.30	210.65	82.22 - 87.22	OB (deep)	N; deep OB paired well
Nearfield Area	SHP-2016-3A	10.81	212.37	11.52	211.66	22.05 - 27.05	OB (shallow)	Y
Nearfield Area	SHP-2016-3B	10.55	212.63	12.47	210.71	82.05 - 87.05	OB (deep)	N; deep OB paired well
Nearfield Area	SHP-2016-4A	17.41	212.56	19.17	210.80	27.40 - 32.40	OB (shallow)	Y
Nearfield Area	SHP-2016-4B	17.13	212.62	19.45	210.30	87.18 - 92.18	OB (deep)	N; deep OB paired well
Nearfield Area	SHP-2016-5A	14.35	212.66	16.35	210.66	27.13 - 32.13	OB (shallow)	Y
Nearfield Area	SHP-2016-5B	14.29	212.66	16.38	210.57	87.07 - 92.07	OB (deep)	N; deep OB paired well
Nearfield Area	SHP-2017-01	17.62	212.01	20.31	209.32	74.0 - 79.0	OB	Y
Nearfield Area	SHP-2017-02	18.58	211.47	20.90	209.15	89.5 - 94.5	OB	Y
North Impact Area	SHM-05-39A	--	--	12.25	209.28	36.74 - 38.74	OB (mid)	Y
North Impact Area	SHM-05-39B	--	--	12.99	208.52	65.74 - 67.74	OB (deep)	N; deep OB paired well
North Impact Area	SHM-05-40X	13.66	209.53	14.99	208.20	31.93 - 33.93	OB (mid)	Y
North Impact Area	SHM-07-03	19.03	208.87	20.70	207.20	24.94 - 34.94	OB (shallow)	Y
North Impact Area	SHM-07-05X	2.75	220.65	14.95	208.45	54.83 - 64.83	BR	N; bedrock well
North Impact Area	SHM-10-01	--	--	4.23	205.42	63.46 - 73.46	OB (deep)	Y
North Impact Area	SHM-10-02	--	--	18.31	204.72	55.84 - 65.84	OB (mid)	Y
North Impact Area	SHM-10-03	--	--	27.03	205.02	60.78 - 70.78	OB (mid)	Y
North Impact Area	SHM-10-04	--	--	6.52	206.09	57.61 - 67.61	OB (mid)	Y
North Impact Area	SHM-10-05A	--	--	25.28	209.81	49.68 - 59.68	OB (mid)	Y
North Impact Area	SHM-10-08	--	--	9.78	204.58	48.50 - 58.50	OB (deep)	Y
North Impact Area	SHM-10-10	--	--	10.92	206.19	57.71 - 67.71	OB (deep)	Y
North Impact Area	SHM-13-01	--	--	3.28	204.80	41.31 - 51.31	OB (mid)	N; deep OB paired well
North Impact Area	SHM-13-02	--	--	13.04	205.68	61.80 - 71.80	OB (deep)	N; deep OB paired well
North Impact Area	SHM-13-03	5.11	206.94	5.39	206.66	44.14 - 54.14	OB (deep)	N; deep OB paired well
North Impact Area	SHM-13-04	18.54	208.48	19.65	207.37	19.68 - 29.68	OB (shallow)	N; deep OB paired well
North Impact Area	SHM-13-05	--	--	16.96	208.18	74.75 - 84.75	OB (deep)	N; deep OB paired well
North Impact Area	SHM-13-06	17.07	206.82	17.63	206.26	35.66 - 45.66	OB (deep)	N; deep OB paired well
North Impact Area	SHM-13-07	18.54	207.10	19.11	206.53	26.53 - 36.53	Unknown	N; unknown lithology in screen zone
North Impact Area	SHM-13-08	20.06	207.84	20.68	207.22	54.71 - 64.71	OB (deep)	Y
North Impact Area	SHM-13-14D	--	--	3.63	206.85	48.20 - 58.20	OB (deep)	N; deep OB paired well
North Impact Area	SHM-13-14S	--	--	3.65	206.90	8.36 - 18.36	OB (shallow)	Y
North Impact Area	SHM-13-15	--	--	4.03	206.55	54.60 - 64.60	OB (deep)	Y
North Impact Area	SHM-99-31A	--	--	1.67	212.67	5.52 - 15.52	OB (shallow)	Y
North Impact Area	SHM-99-31B	--	--	4.57	209.82	51.87 - 61.87	OB (mid)	N; deep OB paired well
North Impact Area	SHM-99-31C	--	--	4.87	209.73	69.96 - 79.96	OB (deep)	N; deep OB paired well
North Impact Area	SHM-99-32X	--	--	10.42	210.86	74.16 - 84.16	OB (deep)	Y
North Impact Area	SHP-05-48A	--	--	4.45	212.86	5.22 - 6.22	OB (shallow)	Y
North Impact Area	SHP-05-48B	--	--	3.07	212.89	4.93 - 5.93	OB (shallow)	N; deep OB paired well
North Impact Area	SHP-05-49A	--	--	5.57	211.10	5.33 - 6.33	OB (shallow)	Y
North Impact Area	SHP-05-49B	--	--	3.32	211.82	4.25 - 6.25	OB (shallow)	N; deep OB paired well
North Impact Area	SHP-99-34B	--	--	13.80	211.11	76.72 - 81.72	OB (deep)	Y
Shepley's Hill	3-2	--	--	40.00	228.20	55.92 - 59.92	BR	N; bedrock well

Table 4
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Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Location	Well Identification	Depth to Water (ft bmp) 5/18/2020	Groundwater Elevation (ft NAVD88) 5/18/2020	Depth to Water (ft bmp) 11/4/2020	Groundwater Elevation (ft NAVD88) 11/4/2020	Screen Interval (ft bmp)	Formation Type	Measurement Included on Contour Maps (Y/N)?
Shepley's Hill	20-1	--	--	45.35	233.17	40.74 - 56.44	BR	N; bedrock well
Shepley's Hill	27-1	--	--	42.85	227.81	60.82 - 65.82	BR	N; bedrock well
Shepley's Hill	27-2	--	--	51.50	223.65	60.08 - 70.08	BR	N; bedrock well
Shepley's Hill	CAP-2B	--	--	23.70	226.51	53.55 -58.55	BR	N; bedrock well
Shepley's Hill	CH-1D	--	--	21.77	228.82	87.13 - 97.13	BR	N; bedrock well
Shepley's Hill	CH-1S	--	--	21.87	228.76	38.17 - 43.17	BR	N; bedrock well
Shepley's Hill	MW-1	--	--	dry	--	6.58 - 8.58 *	OB	N; dry well
Shepley's Hill	MW-11A	--	--	dry	--	4.18 - 6.18 *	OB	N; dry well
Shepley's Hill	MW-14	--	--	dry	--	5.14 - 7.14 *	OB	N; dry well
Shepley's Hill	MW-16	--	--	dry	--	5.18 - 7.18 *	OB	N; dry well
Shepley's Hill	MW-22	--	--	dry	--	4.70 - 6.70 *	OB	N; dry well
Shepley's Hill	MW-4-1	--	--	7.60	239.73	3.72 - 5.72 *	OB	Y
Shepley's Hill	MW-7	--	--	dry	--	6.98 - 8.98 *	OB	N; dry well
Shepley's Hill	MW-9	--	--	dry	--	7.65 - 9.65 *	OB	N; dry well
Shepley's Hill	Q4-1	--	--	35.10	233.28	32.18 - 42.18	BR	N; bedrock well
Shepley's Hill	Q5-1	--	--	31.15	229.84	50.67 - 53.67	BR	N; bedrock well
Surface Water	PSP-01	--	--	--	--	(3.32 ft mark)	Staff Gauge	N; not located and presumed to be destroyed
Surface Water	SHSG-13-01G	--	--	dry	--	(4 ft mark)	Staff Gauge	N; water level below bottom of gauge
Surface Water	SHSG-13-02G	--	--	2.85	202.16	(4 ft mark)	Staff Gauge	Y
Surface Water	SHSG-13-03G	--	--	--	--	(6 ft mark)	Staff Gauge	N; cannot be accessed/viewed
Surface Water	SHSG-14-01G	--	--	2.47	210.54	(3 ft mark)	Staff Gauge	Y
Upgradient	SHL-12	--	--	23.35	225.27	16.40 - 31.40	OB	Y
Upgradient	SHL-15	16.32	243.60	21.00	238.92	15.40 - 25.40	OB	Y
Upgradient	SHL-17	--	--	8.20	225.59	7.91 - 17.91	OB	Y
Upgradient	SHL-24	--	--	16.35	222.40	111.96 - 121.96	OB (deep)	Y
Upgradient	SHL-7	--	--	17.60 ³	218.73	12.55 - 22.55	OB	Y
Upgradient	SHM-93-10D	--	--	30.71	217.30	48.70 - 58.70 *	BR	N; bedrock well
Upgradient	SHM-93-18B	--	--	19.25	218.06	80.60 - 90.60	OB	Y
Upgradient	SHM-93-24A	--	--	16.68	221.74	16.23 - 26.23	OB	Y
Upgradient/AOC32	32M-01-14XBR	--	--	25.88	230.18	35.80 - 45.80	BR	N; bedrock well
Upgradient/AOC32	32M-01-14XOB	--	--	27.05	229.51	17.30 - 27.30	OB	Y
Upgradient/AOC32	32M-01-15XBR	--	--	22.32	235.38	34.50 - 44.50	BR	N; bedrock well
Upgradient/AOC32	32M-01-16XBR	--	--	26.94	230.56	21.00 - 31.00	BR	N; bedrock well
Upgradient/AOC32	32M-92-01X	--	--	20.96	239.21	13.00 - 23.00	OB	Y
Upgradient/AOC32	32Z-01-07XOB	--	--	19.55	239.93	12.70 - 22.70	OB	Y
Upgradient/AOC32	SHL-25	24.62	233.39	28.82	229.19	25.23 - 35.23	OB	Y

Notes:

TOR elevations from November 2017 Shepley's Hill Landfill (SHL) survey data (North American Vertical Datum [NAVD] 1988) well construction log).

¹Water level measurement taken on 5/20/2020

²Water level measurement taken on 5/22/2020

³Water level measurement taken on 11/03/2020

⁴Water level measurement taken on 11/05/2020

⁵Water level measurement taken on 11/10/2020

Table 4
Hydraulic Monitoring Data for Spring and Fall 2020
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Location	Well Identification	Depth to Water (ft bmp) 5/18/2020	Groundwater Elevation (ft NAVD88) 5/18/2020	Depth to Water (ft bmp) 11/4/2020	Groundwater Elevation (ft NAVD88) 11/4/2020	Screen Interval (ft bmp)	Formation Type	Measurement Included on Contour Maps (Y/N)?

Acronyms and Abbreviations:
-- = not measured
amsl = above mean sea level (NAVD 88)
bgs = below ground surface
bmp = below measuring point
BR = bedrock
OB = overburden
TOR = top of riser (referenced measuring point)

Table 6
Spring 2020 LTM Analytical Results and Field Parameters
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Analytical Method Analyte Unit Screening Limit *			Dissolved Metals						Anions		General Chemistry			Field Parameters												
			Arsenic µg/L 10		Iron µg/L 9,100		Manganese µg/L 1,715		Alkalinity mg/L		Chloride mg/L		DOC mg/L		Sulfate mg/L		DO mg/L		ORP mV		pH SU		SPC µS/cm		Temp °C	
Location	Sample ID	Date																								
EPA-PZ-2012-1A	EPA-PZ-2012-1A-SPR20	05/19/2020	3.0	U	270		290		44	15	1.7	1.2		4.10	91.5	6.06	122	9.4	3.04							
EPA-PZ-2012-1B	EPA-PZ-2012-1B-SPR20	05/19/2020	150		9,600		9,000		200	36	1.5	14		2.30	-52.5	6.31	496	11.8	3.08							
EPA-PZ-2012-2A	EPA-PZ-2012-2A-SPR20	05/19/2020	3.0	U	50	U	1.1	J	11	2.8	0.74	J	6.3		3.61	410	4.47	40	12.1	0.22						
EPA-PZ-2012-2B	EPA-PZ-2012-2B-SPR20	05/20/2020	3.0	U	680		4,700		110	31	1.2	5.9		3.81	46.8	6.28	292	9.58	20.9							
EPA-PZ-2012-3A	EPA-PZ-2012-3A-SPR20	05/21/2020	17		14,000		890		100	27	9.4	10	U	3.50	-11.0	6.14	258	10.3	0.02	U						
EPA-PZ-2012-3B	EPA-PZ-2012-3B-SPR20	05/21/2020	3,200		44,000		5,600		180	27	1.7	15		3.72	-97.8	6.64	533	11.6	0.02	U						
EPA-PZ-2012-4A	EPA-PZ-2012-4A-SPR20	05/19/2020	2.7	J	4,900		640		75	39	9.4	1.5		3.84	-52.6	6.45	279	13.1	0.02	U						
EPA-PZ-2012-4B	EPA-PZ-2012-4B-SPR20	05/19/2020	1,800		66,000		640		160	25	2.6	12		3.86	-104	6.69	505	14.6	0.02	U						
EPA-PZ-2012-4B (FD)	SHL-DUP05-SPR20	05/19/2020	2,000		60,000		590		160	25	2.6	11		--	--	--	--	--	--							
EPA-PZ-2012-5A	EPA-PZ-2012-5A-SPR20	05/22/2020	3.0	U	6,700		88		26	15	6.7	4.0		3.73	52.3	5.57	106	9.57	2.78							
EPA-PZ-2012-5B	EPA-PZ-2012-5B-SPR20	05/22/2020	2.4	J	300		9,600		190	37	1.4	10		3.69	24.8	6.81	464	10.8	23.1							
EPA-PZ-2012-6A	EPA-PZ-2012-6A-SPR20	05/22/2020	3.0	U	50	U	3.0	U	37	3.3	0.71	J	2.8		8.01	282	6.30	84	13.7	4.04						
EPA-PZ-2012-6B	EPA-PZ-2012-6B-SPR20	05/22/2020	220		14,000		720		36	8.8	1.1	3.5		0.45	52.3	6.46	117	11.2	6.99							
EPA-PZ-2012-7A	EPA-PZ-2012-7A-SPR20	05/22/2020	3.0	U	50	U	10	U	18	160	0.96	J	3.0		5.64	291	5.79	626	16.5	2.61						
EPA-PZ-2012-7B	EPA-PZ-2012-7B-SPR20	05/22/2020	1,400		16,000		2,700		38	1.2	1.1	3.3		0.37	38.6	6.56	117	13.6	5.06							
EW-01	EW-01-SPR20	05/18/2020	1,600		65,000		2,100		250	17	4.8	5.1		9.26	-43.3	6.62	569	11.8	40.0							
EW-04	EW-04-SPR20	05/18/2020	3,300		39,000		2,400		130	5.8	1.9	5.3		9.54	-65.3	7.73	317	11.9	39.3							
PZ-12-01	PZ-12-01-SPR20	05/18/2020	540		54,000		2,000		190	60	2.4	16		0.43	-1.4	6.49	602	11.3	0.81							
PZ-12-02	PZ-12-02-SPR20	05/15/2020	210		74,000		1,400		260	54	4.3	5.0	U	0.56	99.1	5.49	710	13.7	7.77							
PZ-12-03	PZ-12-03-SPR20	05/18/2020	740		42,000		3,600		180	57	2.3	4.2		0.32	9.8	6.29	574	12.2	39.2							
PZ-12-04	PZ-12-04-SPR20	05/18/2020	750		73,000		1,900		230	40	2.4	3.8		0.32	17.9	6.10	585	12.6	7.99							
PZ-12-05	PZ-12-05-SPR20	05/18/2020	160		19,000		1,400		76	4.4	1.0	7.0		0.34	46.7	6.08	166	13.6	5.31							
PZ-12-06	PZ-12-06-SPR20	05/18/2020	5.2		4,200		1,200		74	3.3	1.0	62		0.27	70.6	5.52	289	12.1	8.55							
PZ-12-06 (FD)	SHL-DUP02-SPR20	05/18/2020	5.5		4,500		1,200		73	3.3	1.0	62		--	--	--	--	--	--							
PZ-12-07	PZ-12-07-SPR20	05/15/2020	70		3,500		1,000		85	1.3	1.5	32		7.78	274	5.44	227	12.5	7.46							
PZ-12-08	PZ-12-08-SPR20	05/19/2020	1.7	J	5,200		1,200		58	0.60	1.3	16		4.90	99.7	6.06	127	10.7	18.9							
PZ-12-09	PZ-12-09-SPR20	05/15/2020	3.0	U	50	U	17		84	1.1	0.52	J	13		5.94	285	4.70	177	12.4	4.89						
PZ-12-10	PZ-12-10-SPR20	05/15/2020	3.0	U	50	U	10	U	33	0.46	J	0.64	J	7.2	10.9	122	6.23	68	11.2	2.46						
SHL-10	SHL-10-SPR20	05/19/2020	3.0	U	50	U	10	U	9.2	J	1.0	0.38	J	1.6	9.55	164	5.79	22	13.5	3.50						
SHL-11	SHL-11-SPR20	05/18/2020	900		68,000		1,700		220	67	2.0	2.3		0.32	9.3	6.30	637	12.0	14.1							
SHL-19	SHL-19-SPR20	05/19/2020	20		1,400		62		33	0.31	J	0.68	J	3.2	10.3	e 5	6.45	56	13.3	7.99						
SHL-20	SHL-20-SPR20	05/18/2020	810		37,000		2,600		110	60	1.3	36		0.40	3.4	6.54	511	11.7	17.6							
SHL-20 (FD)	SHL-DUP01-SPR20	05/18/2020	810		36,000		2,500		110	60	1.3	37		--	--	--	--	--	--							

Table 6
Spring 2020 LTM Analytical Results and Field Parameters
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Analytical Method Analyte Unit Screening Limit *			Dissolved Metals				Anions			General Chemistry			Field Parameters															
			Arsenic µg/L 10		Iron µg/L 9,100		Manganese µg/L 1,715		Alkalinity mg/L		Chloride mg/L		DOC mg/L		Sulfate mg/L		DO mg/L		ORP mV		pH SU		SPC µS/cm		Temp °C		Turbidity NTU	
Location	Sample ID	Date																										
SHL-4	SHL-4-SPR20	05/20/2020	220		24,000		2,500		100		1.5		1.3		27		0.46		18.6		6.58		262		11.0		21.0	
SHM-05-40X	SHM-05-40X-SPR20	05/19/2020	1,900		23,000		700		110		27		1.7		3.1	J	0.26		44.4		6.43		333		13.5		12.0	
SHM-05-40X (FD)	SHL-DUP06-SPR20	05/19/2020	1,900		23,000		700		110		27		1.6		3.2	J	--		--		--		--		--		--	
SHM-05-41B	SHM-05-41B-SPR20	05/21/2020	420		22,000		740		84		430		1.7		5.7		0.36		236		5.33		1,560		12.4		22.0	
SHM-05-41C	SHM-05-41C-SPR20	05/21/2020	660		14,000		2,400		360		1,200		3.1		10		0.37		89.7		6.20		4,550		12.4		7.96	
SHM-07-03	SHM-07-03-SPR20	05/15/2020	3.0	U	110		26		25		130		0.84	J	6.1		5.58		290		5.62		443		13.8		19.1	
SHM-07-05X	SHM-07-05X-SPR20	05/18/2020	15		3,400		74		30		46		3.0		2.3		0.92		216		6.27		188		12.8		119	
SHM-11-02	SHM-11-02-SPR20	05/19/2020	13		12,000		880		220		44		1.6		1.4		0.39		-131		6.96		526		14.1		8.29	
SHM-11-06	SHM-11-06-SPR20	05/20/2020	750		77,000		2,000		220		50		2.1		4.7		0.42		44.7		5.08		658		11.3		3.60	
SHM-11-06 (FD)	SHL-DUP03-SPR20	05/20/2020	720		79,000		2,000		200		50		1.9		4.8		--		--		--		--		--		--	
SHM-13-03	SHM-13-03-SPR20	05/21/2020	150		10,000		11,000		220		180		2.3		2.9		3.21		-38.3		5.77		1,060		15.4		0.02	U
SHM-13-04	SHM-13-04-SPR20	05/20/2020	200		1,300		100		44		160		0.89	J	8.0		6.05		49.1		6.42		640		13.4		10.4	
SHM-13-06	SHM-13-06-SPR20	05/19/2020	2,900		22,000		1,200		57		95		1.1		2.7	J	0.53		22.3		6.70		402		11.5		29.2	
SHM-13-07	SHM-13-07-SPR20	05/22/2020	400		12,000		2,500		72		96		1.2		7.5		0.92		199		5.64		471		17.4		8.63	
SHM-13-08	SHM-13-08-SPR20	05/22/2020	630		19,000		410		110		17		2.1		2.8		0.99		252		5.05		314		15.4		7.66	
SHM-93-22B	SHM-93-22B-SPR20	05/21/2020	170		10,000		9,300		240		34		1.6		7.9		0.32		87.1		6.13		481		10.96		17.3	
SHM-96-5B	SHM-96-5B-SPR20	05/19/2020	1,100		15,000		8,000		210		30		1.6		17		0.50		82.6		6.47		491		11.3		21.4	
SHP-01-36X	SHP-01-36X-SPR20	05/20/2020	5.9		760		32		33		62		2.8		5.6		3.18		23.4		6.41		272		11.8		0.02	U
SHP-01-37X	SHP-01-37X-SPR20	05/20/2020	13		1,500		150		37		68		2.4		6.6		3.77		-17.0		6.58		315		12.2		0.73	
SHP-01-38A	SHP-01-38A-SPR20	05/21/2020	87		13,000		1,200		60		0.49	J	1.1		16		3.33		1.3		6.13		143		10.8		0.02	U
SHP-01-38A (FD)	SHL-DUP04-SPR20	05/21/2020	86		15,000		1,300		60		0.48	J	1.1		16		--		--		--		--		--		--	
SHP-2016-06A	SHP-2016-06A-SPR20	05/21/2020	760		160		920		140		8.7		3.2		36		0.88		23.1		7.63		330		11.7		5.23	
SHP-2016-06B	SHP-2016-06B-SPR20	05/21/2020	1,100		310		430		260		7.4		14		210		0.38		-13.9		7.23		971		13.9		3.83	
SHP-2016-06C	SHP-2016-06C-SPR20	05/21/2020	310		100		200		130		1.5		0.47	J	10		0.43		272		6.03		244		17.3		2.74	
SHP-2016-07A	SHP-2016-07A-SPR20	05/20/2020	74		5,600		4,100		34		1.4		1.8		2.9		0.39		10.1		6.12		68		13.7		2.22	
SHP-2016-07B	SHP-2016-07B-SPR20	05/15/2020	57		110		470		130		2.6		1.6		34		4.47		16.7		7.09		211		13.3		0.02	U
SHP-2016-1A	SHP-2016-1A-SPR20	05/15/2020	3.0	U	50	U	10	U	17		0.55		0.65	J	3.2		10.5		190		5.59		43		11.5		2.37	
SHP-2016-1B	SHP-2016-1B-SPR20	05/19/2020	110		15,000		840		66		6.7		1.9		2.2		4.54		-91.8		6.76		175		11.7		17.3	
SHP-2016-2A	SHP-2016-2A-SPR20	05/20/2020	9.5		32	J	290		58		2.1		0.66	J	3.8		2.28		-46.9		8.47		96		11.2		2.60	
SHP-2016-2B	SHP-2016-2B-SPR20	05/20/2020	260		31,000		1,900		120		7.7		1.8		2.3		0.46		19.5		6.38		248		8.62		1.15	
SHP-2016-3A	SHP-2016-3A-SPR20	05/20/2020	3.1		7,400		380		37		1.9		0.9	J	2.2		1.13		94.4		6.16		85		10.1		1.09	
SHP-2016-3B	SHP-2016-3B-SPR20	05/20/2020	160		25,000		2,000		100		5.9		1.7		2.4		0.29		55.0		6.36		202		10.0		2.22	
SHP-2016-4A	SHP-2016-4A-SPR20	05/21/2020	3.0	U	68		70		11		4.2		0.7	J	6.9		6.48		153		5.82		46		11.2		1.60	

Table 6
Spring 2020 LTM Analytical Results and Field Parameters
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Analytical Method Analyte Unit Screening Limit *			Dissolved Metals				Anions		General Chemistry		Field Parameters					
			Arsenic µg/L 10	Iron µg/L 9,100	Manganese µg/L 1,715	Alkalinity mg/L	Chloride mg/L	DOC mg/L	Sulfate mg/L	DO mg/L	ORP mV	pH SU	SPC µS/cm	Temp °C	Turbidity NTU	
			Location	Sample ID	Date											
SHP-2016-4B	SHP-2016-4B-SPR20	05/21/2020	650	29,000	1,900		91	4.0	1.4	4.0	0.39	4.4	6.52	207	10.0	0.09
SHP-2016-5A	SHP-2016-5A-SPR20	05/21/2020	3.0	2,000	150		60	31	6.5	2.1	0.23	114	5.96	180	9.6	4.63
SHP-2016-5B	SHP-2016-5B-SPR20	05/21/2020	470	47,000	2,500		150	12	2.6	1.6	0.33	61.9	5.99	352	10.3	3.62

Notes:

*Screening Limits: Shepley's Hill Landfill (SHL) Cleanup Goals
Screening Limits Source: USACE. 1995. Record of Decision, Shepley's Hill Landfill Operable Unit, Fort Devens, Massachusetts. September.

Acronyms and Abbreviations:

-- no data available
°C degrees Celsius
µg/L microgram per liter
µS/cm microsiemen per centimeter
DO dissolved oxygen
DOC dissolved organic carbon
FD field duplicate
LTM long-term monitoring
mg/L milligram per liter
mV millivolt
NTU Nephelometric Turbidity Unit
ORP oxidation-reduction potential
SPC specific conductivity
SU standard unit
Temp temperature

Analytical Parameters:

=Above Cleanup Goal

Qualifiers

J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the method detection limit.

Table 7
Fall 2020 LTM Analytical Results and Field Parameters
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Analytical Method Analyte Unit Screening Limit *			Dissolved Metals						Anions			General Chemistry			Field Parameters								
			Arsenic µg/L 10		Iron µg/L 9,100		Manganese µg/L 1,715		Alkalinity mg/L		Chloride mg/L	DOC mg/L		Sulfate mg/L	DO mg/L	ORP mv	pH SU	SPC µS/cm	Temp °C	Turbidity NTU			
Location	Sample ID	Date																					
EPA-PZ-2012-1A	EPA-PZ-2012-1A-FAL20	10/30/2020	3.0	U	140		170		39		3.7		1.8	U	1.8		0.78	88.8	6.59	81	7.2	37.2	
EPA-PZ-2012-1B	EPA-PZ-2012-1B-FAL20	10/30/2020	3.6		5,800		790		74		48		7.5		1.7		0.89	72.4	6.38	431	6.7	8.77	
EPA-PZ-2012-2A	EPA-PZ-2012-2A-FAL20	11/05/2020	3.0	U	50	U	1.5	J	13		6.9		1.0	U	6.2		5.79	264	5.55	47	12.4	1.90	
EPA-PZ-2012-2B	EPA-PZ-2012-2B-FAL20	11/05/2020	3.0	U	4,300		6,000		130		45		1.4	U	10		0.81	54.2	5.93	288	12.4	12.4	
EPA-PZ-2012-3A	EPA-PZ-2012-3A-FAL20	11/02/2020	12		13,000		720		97		27		9.8		1.0	U	0.92	223	5.76	195	10.6	8.40	
EPA-PZ-2012-3B	EPA-PZ-2012-3B-FAL20	11/02/2020	2,700		37,000		5,300		170		29		1.4		16		0.88	131	6.42	311	9.5	35.5	
EPA-PZ-2012-4A	EPA-PZ-2012-4A-FAL20	10/30/2020	210		11,000		8,000		170		35		1.8	U	18		2.95	9.1	6.47	282	7.3	10.2	
EPA-PZ-2012-4B	EPA-PZ-2012-4B-FAL20	10/29/2020	2,000		59,000		780		140		28		2.6		12		3.51	5.4	6.46	468	9.1	33.3	
EPA-PZ-2012-4B (FD)	SHL-DUP05-FAL20	10/29/2020	1,900		57,000		760		160		28		2.0		12		--	--	--	--	--	--	
EPA-PZ-2012-5A	EPA-PZ-2012-5A-FAL20	11/10/2020	3.0	U	5,800	J	87		22		15		6.3		4.4		0.59	103	5.37	81	13.1	12.1	
EPA-PZ-2012-5B	EPA-PZ-2012-5B-FAL20	11/10/2020	2.5	J	230		9,000		180		42		1.5		11		0.82	74.7	6.17	333	13.2	9.60	
EPA-PZ-2012-6A	EPA-PZ-2012-6A-FAL20	11/11/2020	3.0	U	50	U	3.0	U	38		9.3		0.97	J	3.9		7.13	65.7	6.40	116	16.8	4.23	
EPA-PZ-2012-6B	EPA-PZ-2012-6B-FAL20	11/11/2020	300		16,000		970		42		3.7		1.3		2.8		0.46	-1.6	6.45	150	15.4	2.34	
EPA-PZ-2012-7A	EPA-PZ-2012-7A-FAL20	11/06/2020	3.0	U	200		3.0	J	24		100		1.0	U	8.2		4.94	123	7.97	375	12.7	3.24	
EPA-PZ-2012-7B	EPA-PZ-2012-7B-FAL20	11/06/2020	1,300		21,000		2,500		52		1.4		1.1	U	2.8		0.46	44.4	8.12	145	12.6	3.48	
EW-01	EW-01-FAL20	10/30/2020	1,400		56,000		1,800		210		18		4.1		4.8		1.05	96.1	6.50	505	9.9	4.23	
EW-04	EW-04-FAL20	10/30/2020	3,000		33,000		2,100		100		6.7		1.9	U	4.5		2.11	74.7	6.76	264	6.7	6.18	
N5-P1	N5-P1-FAL20	10/30/2020	520		510		980		130		19		1.2	U	17		0.68	-38.3	6.78	171	9.1	6.00	
PZ-12-01	PZ-12-01-FAL20	11/02/2020	600		52,000		1,900		160		57		1.9		19		0.63	10.7	6.81	527	9.2	11.7	
PZ-12-02	PZ-12-02-FAL20	11/02/2020	270		64,000		1,100		200		64		3.0		1.0	U	0.69	-8.5	6.56	621	10.2	1.96	
PZ-12-03	PZ-12-03-FAL20	11/02/2020	720		50,000		3,300		170		47		1.7		3.0		0.37	-17.6	6.63	504	8.5	30.0	
PZ-12-04	PZ-12-04-FAL20	11/02/2020	710		75,000		1,900		160		61		2.3	U	1.0	U	0.52	-2.3	6.50	572	8.2	24.2	
PZ-12-05	PZ-12-05-FAL20	11/03/2020	140		38,000		3,500		120		12		2.3	U	7.0		0.91	43.8	6.51	277	9.4	3.37	
PZ-12-06	PZ-12-06-FAL20	11/03/2020	13		7,100		2,400		110		7.5		1.5	U	23		0.60	58.9	6.24	243	10.3	3.11	
PZ-12-07	PZ-12-07-FAL20	11/05/2020	110		3,800		1,100		87		2.2		1.4	U	50		3.85	100	7.69	241	12.9	331	
PZ-12-08	PZ-12-08-FAL20	11/05/2020	24		17,000		1,700		85		1.1		1.7	U	8.8		0.42	89.7	7.49	167	13.6	29.8	
PZ-12-09	PZ-12-09-FAL20	10/26/2020	1.6	J	50	U	14		110		1.1		0.46	J	10		1.39	122	6.99	182	9.8	39.6	
PZ-12-10	PZ-12-10-FAL20	10/26/2020	3.0	U	50	UJ	3.0	UJ	30		0.44	J	0.94	J	9.7		4.47	165	6.82	71	9.2	2.43	
SHL-10	SHL-10-FAL20	11/09/2020	3.0	U	50	U	23	U	20		1.1		1.7	U	4.0		2.27	120	8.24	44	16.3	1.53	
SHL-11	SHL-11-FAL20	10/29/2020	900		48,000		2,000		120		66		2.4		16		0.52	21.5	6.53	534	10.6	35.8	
SHL-12	SHL-12-FAL20	11/02/2020	2.3	J	130		180		63		57		1.7	U	90		2.96	71.3	6.05	247	8.5	6.30	
SHL-15	SHL-15-FAL20	11/02/2020	26		4,500		250		100		19		2.8		9.1		0.69	-1.4	5.95	161	10.7	12.1	
SHL-19	SHL-19-FAL20	10/26/2020	3.0	U	50	U	15		88		0.92		1.0	U	19		4.35	142	6.74	178	9.9	15.9	

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Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Analytical Method Analyte Unit Screening Limit *			Dissolved Metals						Anions			General Chemistry			Field Parameters								
			Arsenic µg/L 10		Iron µg/L 9,100		Manganese µg/L 1,715		Alkalinity mg/L		Chloride mg/L	DOC mg/L		Sulfate mg/L	DO mg/L	ORP mv	pH SU	SPC µS/cm	Temp °C	Turbidity NTU			
Location	Sample ID	Date																					
SHL-20	SHL-20-FAL20	10/29/2020	760		52,000		2,100		110		63		1.8		28		3.37	17.1	6.45	513	10.4	10.7	
SHL-22	SHL-22-FAL20	11/03/2020	2.4	J	50	U	7,700		320		29		1.5	U	8.9		1.17	97.8	6.67	352	8.7	2.40	
SHL-22 (FD)	SHL-DUP07-FAL20	11/03/2020	2.2	J	50	U	8,200		320		29		1.4	U	8.9		--	--	--	--	--	--	
SHL-23	SHL-23-FAL20	11/12/2020	3.0	U	50	U	11	U	5.8	J	4.3		1.6		6.2		10.1	200	6.52	43	10.6	1.06	
SHL-24	SHL-24-FAL20	10/26/2020	3.9		50	U	3.0	U	50		39		1.0	U	24		2.66	159	6.97	202	11.4	0.02	U
SHL-24 (FD)	SHL-DUP09-FAL20	10/26/2020	4.1		50	U	3.0	U	52		39		1.0	U	24		--	--	--	--	--	--	
SHL-3	SHL-3-FAL20	11/09/2020	3.0	U	50	U	10	U	61		0.65		1.6	U	6.3		3.91	130	7.58	136	16.1	1.12	
SHL-4	SHL-4-FAL20	11/12/2020	110		15,000		2,500		76		1.5		1.6		21		0.80	-17.2	6.00	147	12.7	65.2	
SHL-5	SHL-5-FAL20	11/09/2020	4.6		2,100		290		30		13		8.2		1.0	U	0.85	92.8	5.77	81	15.1	33.1	
SHL-7	SHL-7-FAL20	11/03/2020	3.0	U	700		63		39		73		1.0	U	3.0		0.79	84.3	5.91	175	9.1	8.90	
SHL-8D	SHL-8D-FAL20	11/10/2020	3.0	U	100	U	19		21		45		1.0	U	7.5		0.66	89.0	5.94	154	13.9	2.00	
SHL-8S	SHL-8S-FAL20	11/10/2020	3.0	U	70	U	7.3	J	24		7.2		1.0	U	6.1		4.07	163	5.98	66	13.3	2.30	
SHL-9	SHL-9-FAL20	11/03/2020	35		6,200		390		69		50		5.7		1.6		0.83	3.6	6.52	194	8.7	72.3	
SHM-05-39A	SHM-05-39A-FAL20	10/26/2020	7.3		150		96		59		26		1.1		5.2		1.71	196	6.28	150	12.1	33.5	
SHM-05-39B	SHM-05-39B-FAL20	10/26/2020	420		15,000		760		58		240		1.3		7.8		0.77	-70.5	6.91	523	10.8	11.5	
SHM-05-40X	SHM-05-40X-FAL20	11/11/2020	2,100		24,000		670		150		11		1.6		3.8		0.45	6.4	6.36	403	13.5	11.5	
SHM-05-40X (FD)	SHL-DUP10-FAL20	11/11/2020	2,300		24,000		680		140		11		1.6		3.8		--	--	--	--	--	--	
SHM-05-41A	SHM-05-41A-FAL20	11/06/2020	18		4,800		170		36		5.9		1.0	U	6.5		0.32	19.8	8.17	104	11.8	6.25	
SHM-05-41B	SHM-05-41B-FAL20	11/06/2020	570		35,000		1,100		86		48		1.7	U	2.5	J	0.46	7.9	7.67	423	11.4	5.51	
SHM-05-41C	SHM-05-41C-FAL20	11/06/2020	610		14,000		2,600		350		380		3.2		2.4		0.54	-19.9	7.58	1,940	13.6	3.34	
SHM-05-42A	SHM-05-42A-FAL20	11/09/2020	3.0	U	50	U	100		26		7.4		1.1	U	7.6		0.68	176	5.63	67	12.2	15.6	
SHM-05-42B	SHM-05-42B-FAL20	11/09/2020	160		28,000		6,200		170		38		1.8	U	9.4		0.72	-24.5	6.22	296	12.1	6.30	
SHM-07-03	SHM-07-03-FAL20	11/11/2020	3.0	U	320		8.9	J	15	U	320		0.87	J	11		7.85	139	5.84	1,270	14.2	12.9	
SHM-07-05X	SHM-07-05X-FAL20	11/11/2020	83		1,900		140		38		48		2.0		2.7		0.81	56.2	6.75	253	18.2	27.4	
SHM-10-02	SHM-10-02-FAL20	11/10/2020	3.0	U	62	U	2,000		110		150		1.2		6.3		0.28	101	6.40	608	14.8	4.02	
SHM-10-03	SHM-10-03-FAL20	11/10/2020	1.9	J	75	U	8.0	J	160		110		1.7		7.5		0.52	93.5	6.80	598	16.5	9.84	
SHM-10-04	SHM-10-04-FAL20	11/12/2020	3.0	U	50	U	280	J	63		90		1.2		17		0.73	96.0	6.03	459	11.6	6.01	
SHM-10-05A	SHM-10-05A-FAL20	11/12/2020	2.0	J	96	U	10	U	36		43		0.89	J	8.8		1.21	158	5.64	165	13.5	6.20	
SHM-10-06	SHM-10-06-FAL20	10/30/2020	1,000		63,000		1,400		140		33		1.9	U	7.8		0.77	-10.6	6.50	479	8.3	28.3	
SHM-10-06A	SHM-10-06A-FAL20	11/13/2020	71		9,800		1,500		85		20		1.4		4.5		0.82	50.0	5.59	150	9.3	6.30	
SHM-10-07	SHM-10-07-FAL20	11/10/2020	1,000		46,000		2,100		130		70		2.1		7.0		0.41	-45.4	7.74	644	12.7	5.27	
SHM-10-08	SHM-10-08-FAL20	11/10/2020	3.0	U	53	U	340		220		89		1.7		5.2		0.36	113	6.46	656	14.7	4.65	
SHM-10-10	SHM-10-10-FAL20	11/09/2020	3.0	U	50	U	3.0	U	200		64		2.8	U	3.9		0.32	216	6.33	5,090	16.9	2.55	

Table 7
Fall 2020 LTM Analytical Results and Field Parameters
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts



Analytical Method Analyte Unit Screening Limit *			Dissolved Metals						Anions			General Chemistry			Field Parameters							
			Arsenic µg/L 10		Iron µg/L 9,100		Manganese µg/L 1,715		Alkalinity mg/L		Chloride mg/L	DOC mg/L		Sulfate mg/L	DO mg/L	ORP mv	pH SU	SPC µS/cm	Temp °C	Turbidity NTU		
Location	Sample ID	Date																				
SHM-10-11	SHM-10-11-FAL20	11/12/2020	430		47,000		1,900		130		34		2.5		56		0.19	15.9	5.97	541	12.0	19.0
SHM-10-12	SHM-10-12-FAL20	11/11/2020	3,400		69,000		5,000		170		2.9		4.1		1.7		0.50	53.6	5.78	394	12.3	13.1
SHM-10-13	SHM-10-13-FAL20	10/30/2020	430		58,000		1,200		250		31		4.3		1.0	U	0.68	-64.6	6.35	332	8.2	12.4
SHM-10-14	SHM-10-14-FAL20	11/10/2020	5,000		86,000		1,900		250		5.1		4.1		1.0	U	0.93	-67.4	6.28	244	6.3	10.7
SHM-10-15	SHM-10-15-FAL20	11/02/2020	6,800		44,000		7,300		220		8.1		2.2		8.1		0.85	-43.6	6.34	228	8.8	19.5
SHM-10-16	SHM-10-16-FAL20	11/12/2020	1,100		29,000		2,100		290		26		1.8		3.9		0.87	-65.4	6.22	387	11.5	25.9
SHM-11-02	SHM-11-02-FAL20	11/03/2020	12		11,000		830		250		42		1.3	U	0.85	J	0.49	-29.7	6.76	533	9.3	14.9
SHM-11-06	SHM-11-06-FAL20	11/02/2020	620		62,000	J	1,600	J	150		55		1.8		9.6		0.46	41.3	7.16	533	9.2	10.4
SHM-11-06 (FD)	SHL-DUP03-FAL20	11/02/2020	680		56,000		1,400		150		55		1.7		9.3		--	--	--	--	--	--
SHM-13-01	SHM-13-01-FAL20	11/09/2020	3.0	UJ	50	U	10	UJ	20		150		1.2	U	8.7		4.26	230	5.69	4690	11.8	2.95
SHM-13-02	SHM-13-02-FAL20	11/05/2020	3.0	U	50	U	74		110		41		1.5	U	4.4		2.04	165	6.13	245	13.5	9.40
SHM-13-03	SHM-13-03-FAL20	10/29/2020	83		6,200		7,500		140		64		2.6		3.5		1.15	14.4	4.93	315	10.8	5.60
SHM-13-04	SHM-13-04-FAL20	11/06/2020	260	J	2,400		160		36		100		1.0	U	10		2.89	239	6.17	290	14.7	128
SHM-13-05	SHM-13-05-FAL20	11/06/2020	6.4		1,000		1,100		140		38		2.0	U	7.9		1.15	217	6.13	134	12.4	3.70
SHM-13-06	SHM-13-06-FAL20	11/09/2020	2,200		20,000		980		51		120		1.7	U	6.7		0.06	-131	6.86	5,000	16.1	14.2
SHM-13-07	SHM-13-07-FAL20	11/05/2020	420		15,000		2,000		44		170		1.0	U	8.4		0.85	-26.3	6.35	498	14.6	77.3
SHM-13-08	SHM-13-08-FAL20	11/10/2020	1,000		59,000		2,100		150		72		2.7		5.2		0.27	-120	6.55	612	18.0	15.9
SHM-13-14D	SHM-13-14D-FAL20	10/29/2020	3.0	U	50	U	380		53		120		1.9		15		3.62	94.3	5.57	409	10.9	14.3
SHM-13-14S	SHM-13-14S-FAL20	10/29/2020	1.5	J	110		27		87		120		1.8		7.3		0.67	158	5.83	305	11.4	5.90
SHM-13-15	SHM-13-15-FAL20	10/29/2020	7.1		1,200		4,300		320		42		2.5		5.4		0.67	14.5	6.56	394	11.2	12.7
SHM-93-10D	SHM-93-10D-FAL20	11/11/2020	3.0	U	490		9.9	J	53		30		1.2		18		1.08	-122	11.20	275	19.4	15.7
SHM-93-18B	SHM-93-18B-FAL20	11/12/2020	3.0	U	50	U	450		49		140		0.83	J	34		0.69	216	5.86	392	12.6	8.50
SHM-93-22B	SHM-93-22B-FAL20	11/03/2020	300		12,000		9,000		220		34		1.4	U	7.8		0.90	-24.2	6.45	322	9.1	42.0
SHM-93-22C	SHM-93-22C-FAL20	11/03/2020	4.4		50	U	10	U	120		20		2.8	U	5.1		2.46	-13.9	7.52	192	9.2	4.20
SHM-93-24A	SHM-93-24A-FAL20	10/26/2020	3.0	U	50	U	6.4	J	25		190		0.68	J	55		8.09	257	5.86	460	12.0	2.99
SHM-96-5B	SHM-96-5B-FAL20	11/10/2020	720		8,600		7,900		210		35		1.6		16		1.07	2.6	6.17	324	12.0	124
SHM-96-5B (FD)	SHL-DUP08-FAL20	11/10/2020	640		8,000		7,900		210		35		1.7		16		--	--	--	--	--	--
SHM-96-5C	SHM-96-5C-FAL20	11/10/2020	29		7,500		9,700		200		31		2.4		6.4		0.69	8.4	6.27	335	13.1	12.6
SHM-99-31A	SHM-99-31A-FAL20	11/02/2020	20		7,600		270		14	U	20		3.9		7.4		0.99	266	5.58	86	8.2	14.6
SHM-99-31B	SHM-99-31B-FAL20	10/30/2020	1.9	J	17	J	1.5	J	35		8.8		2.3		4.7		6.46	97.6	6.78	77	6.7	5.30
SHM-99-31C	SHM-99-31C-FAL20	10/30/2020	140		12,000		4,600		230		31		1.9	U	4.7		1.10	-37.1	6.61	31	6.7	4.60
SHM-99-32X	SHM-99-32X-FAL20	10/30/2020	26		4,200		2,800		58		72		1.2	U	11		1.06	-36.1	6.63	241	8.8	11.4

Table 7
Fall 2020 LTM Analytical Results and Field Parameters
Shepley's Hill Landfill, Former Fort Devens Army Installation
Devens, Massachusetts

Analytical Method Analyte Unit Screening Limit *			Dissolved Metals				Anions		General Chemistry		Field Parameters																			
			Arsenic µg/L 10		Iron µg/L 9,100		Manganese µg/L 1,715		Alkalinity mg/L		Chloride mg/L		DOC mg/L		Sulfate mg/L		DO mg/L		ORP mv		pH SU		SPC µS/cm		Temp °C		Turbidity NTU			
Location	Sample ID	Date																												
SHP-01-36X	SHP-01-36X-FAL20	11/11/2020	6.6		530		49		33		74		2.9		8.6		0.97	46.3	6.42	232	13.6	2.70								
SHP-01-37X	SHP-01-37X-FAL20	11/11/2020	6.1		430		53		25		75		3.7		8.3		3.38	44.9	6.66	247	15.4	3.20								
SHP-01-38A	SHP-01-38A-FAL20	11/11/2020	150		24,000		2,200		90		14		1.4		8.0		0.88	29.6	5.82	191	15.0	7.10								
SHP-01-38A (FD)	SHL-DUP04-FAL20	11/11/2020	140		25,000		2,300		91		14		1.4		8.1		--	--	--	--	--	--								
SHP-2016-06A	SHP-2016-06A-FAL20	11/12/2020	640		340		1,000		150		4.9		3.3		41		0.44	2.8	8.27	399	11.9	3.15								
SHP-2016-06B	SHP-2016-06B-FAL20	11/12/2020	1,100		240		550		160		3.6		4.8		76		0.45	-7.5	8.70	501	10.2	7.22								
SHP-2016-06C	SHP-2016-06C-FAL20	11/12/2020	350		150		180		130		1.5		1.0	U	9.4		0.36	-7.8	8.98	256	9.6	7.13								
SHP-2016-07B	SHP-2016-07B-FAL20	11/13/2020	65		460		580		110		2.6		1.6		30		1.38	-13.5	7.05	174	8.4	42.1								
SHP-2016-07B (FD)	SHL-DUP06-FAL20	11/13/2020	71		500		610		130		2.7		1.8		33		--	--	--	--	--	--								
SHP-2016-1A	SHP-2016-1A-FAL20	11/05/2020	3.0	U	240		6.6	J	16		0.53		1.0	U	4.5		3.52	101	7.64	45	12.9	8.48								
SHP-2016-1B	SHP-2016-1B-FAL20	11/05/2020	140		24,000		1,100		91		5		1.8	U	2.6		0.30	45.5	7.46	207	12.5	6.62								
SHP-2016-2A	SHP-2016-2A-FAL20	11/06/2020	8.5		120	U	290		57		2.2		1.0	U	3.6		2.87	7.2	8.74	81	11.6	5.00								
SHP-2016-2B	SHP-2016-2B-FAL20	11/06/2020	520		43,000		2,400		10	U	14		1.8	U	3.2		0.78	-78.2	6.51	269	10.4	4.60								
SHP-2016-3A	SHP-2016-3A-FAL20	11/02/2020	5.3		14,000		670		55		14		1.3		1.7		1.17	151	6.53	97	6.6	3.40								
SHP-2016-3B	SHP-2016-3B-FAL20	11/03/2020	180		29,000		2,200		110		5.9		1.9	U	1.8		1.01	-43.9	6.30	151	7.3	11.8								
SHP-2016-4A	SHP-2016-4A-FAL20	11/06/2020	3.0	U	50	U	110		17		4.2		1.0	U	4.6		4.27	148	6.19	40	10.3	7.20								
SHP-2016-4B	SHP-2016-4B-FAL20	11/06/2020	1,700		48,000		2,600		160		22		1.7	U	5.1		0.87	-69.6	6.43	305	10.1	6.50								
SHP-2016-5A	SHP-2016-5A-FAL20	11/09/2020	3.9		2,200		200		56		39		5.5		2.7		0.72	-5.1	6.40	157	11.2	2.79								
SHP-2016-5B	SHP-2016-5B-FAL20	11/09/2020	730		57,000		2,600		160		25		2.7	U	9.6		0.76	-87.7	6.56	339	12.8	2.10								
SHP-99-29X	SHP-99-29X-FAL20	11/02/2020	2,300		44,000		5,500		100		2.3		2.4		3.2		1.50	0.2	5.92	118	7.9	67.9								

Notes:

*Screening Limits: Shepley's Hill Landfill (SHL) Cleanup Goals
Screening Limits Source: USACE. 1995. Record of Decision, Shepley's Hill Landfill Operable Unit, Fort Devens, Massachusetts. September.

Acronyms and Abbreviations:

--	no data available	mg/L	milligram per liter
°C	degrees Celsius	mV	millivolt
µg/L	microgram per liter	NTU	Nephelometric Turbidity Unit
µS/cm	microsiemen per centimeter	ORP	oxidation-reduction potential
DO	dissolved oxygen	SPC	specific conductivity
DOC	dissolved organic carbon	SU	standard unit
FD	field duplicate	Temp	temperature
LTM	long-term monitoring		

Analytical Parameters:

=Above Cleanup Goal

Qualifiers

J	The analyte was positively identified, the quantitation is an estimation.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the method detection limit.

Appendix A

Groundwater Monitoring Field Forms

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI 556 MPS"]
SERIAL NUMBER	14F100062
SAMPLER	Desmond Bedard
DATE	5/15/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER	OGD136 - conductivity (apr/21); 0GB276 - pH (feb/22)					
EXPIRATION DATE	04/30/2021					
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE			
PH	7.05	7.01		09:24	PH	yes
CONDUCTIVITY	0.89	1.001		09:24	CONDUCTIVITY	yes

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:



SIGNED

5/15/2020

DATE

CHECKED
BY

DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/15/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER	Lt 231D		
EXPIRATION DATE	09/15/2020		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.12	0.02	yes	09:16

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

W. E. B. DuBois

5/15/2020

SIGNED

DATE

CHECKED
BY

DATE _____

Devens

Created 2020-05-18 20:32:14 UTC by Diane Champagne

Updated 2020-05-18 20:35:16 UTC by Brian Webb

Location 42.5543686934212, -71.5952932835292

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name Devens

Project Number 30048392

Model Ysi

Model Ysi

Serial Number(s) 02f0329ab

Sampler Diane champagne

Date 2020-05-18

Calibration Type? Auto and Turbidity Calibration

Calibration Type? Both

Turbidity Calibration

08:00, 12.2, 9.99, yes

Pre Calibration 12.2

Post Calibration 9.99

Calibration Within Range Yes

Time 08:00

Auto Calibration

08:02

Please select all parameters you wish to calibrate together and enter them together at the same time in the form.

Time 08:02

Calibrated Parameters pH, Conductivity, DO

Calibration Ranges are specific to the model of the water quality meter

pH

Calibration Range for pH - +/- 0.2 S.U

pH Pre Calibration 7.19

pH Post Calibration 7

pH Calibration Within Range Yes

Conductivity

Calibration Range for Conductivity - +/- 1% of the calibration standard

Conductivity Pre Calibration 1.444

Conductivity Post Calibration 1.413

Conductivity Calibration Within Range Yes

ORP

Calibration Range for ORP- +/- 25mV

Dissolved Oxygen

Calibration Range for DO- Atmospheric

DO Pre Calibration	8.65

DO Post Calibration	9.99

DO Calibration Within Range	Yes

Turbidity

Calibration Range for Turbidity - +/- 5% of the calibration standard

Notes	Out of Palms orp cal solution. US Env Rental did not put orp cal solution in ysi pack

Signed

A handwritten signature in black ink, appearing to read 'D. Har' or similar, with a stylized, cursive script.

Signed 2020-05-18 20:34:17 UTC

Fort Devens

Created	2020-05-18 11:43:05 UTC by Gabriel O'Connor
Updated	2020-05-18 11:56:57 UTC by Ryan Miller
Location	42.4407917838427, -71.2989146286139

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Fort Devens
Client	Other
Model	YSI 650 MDS
Model	YSI 650 MDS
Serial Number(s)	01M0616AB
Sampler	Gabriel O'Connor
Date	2020-05-18
Calibration Type?	Auto and Turbidity Calibration
Calibration Type?	Both

Auto Calibration

Expiration Date	2022-02-01

07:45

Please select all parameters you wish to calibrate together and enter them together at the same time in the form.

Time	07:45
Calibrated Parameters	pH, Conductivity, Turbidity, DO
Calibration Ranges are specific to the model of the water quality meter	

pH

Calibration Range for pH - +/- 0.2 S.U

pH Pre Calibration	3.97
pH Post Calibration	4
pH Calibration Within Range	Yes

Conductivity

Calibration Range for Conductivity - +/- 1% of the calibration standard

Conductivity Pre Calibration	928
Conductivity Post Calibration	997
Conductivity Calibration Within Range	Yes

ORP

Calibration Range for ORP- +/- 25mV

Dissolved Oxygen

Calibration Range for DO- Atmospheric

DO Pre Calibration	110
DO Post Calibration	103
DO Calibration Within Range	No

Turbidity

Calibration Range for Turbidity - +/- 5% of the calibration standard

Turbidity Pre Calibration	19.96

Turbidity Post Calibration	19.99

Turbidity Calibration Within Range	Yes

Signed

A handwritten signature in black ink, consisting of a stylized 'J' followed by a horizontal line and a small loop.

Signed 2020-05-18 11:56:48 UTC

Date	2020-05-18

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI 556 MPS"]
SERIAL NUMBER	14F100062
SAMPLER	Desmond Bedard
DATE	5/18/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER	0GB276 - pH - Feb 22; 0GD136 - conductivity- Apr 21					
EXPIRATION DATE	04/30/2021					
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE			
PH	7.23	7.02		15:16	PH	yes
CONDUCTIVITY	990	1001		15:16	CONDUCTIVITY	yes

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:



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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/18/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER	231D		
EXPIRATION DATE	09/30/2020		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.22	0.03	yes	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:


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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Ysi"]
SERIAL NUMBER	02f0329ab
SAMPLER	Diane champagne
DATE	5/18/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
12.2	9.99	yes	08:00

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--
PH	7.19	7		08:02	PH	yes
CONDUCTIVITY	1.444	1.413		08:02	CONDUCTIVITY	yes
DO	8.65	9.99		08:02	DO	yes

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Out of Palms orp cal solution. US Env Rental did not put orp cal solution in ysi pack



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Devens

Created 2020-05-19 20:54:34 UTC by Diane Champagne

Updated 2020-05-19 20:56:58 UTC by Brian Webb

Location 42.5429510744685, -71.4660929516623

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name Devens

Project Number 30048392

Model Ysi

Model Ysi

Serial Number(s) 02f0329ab

Sampler Diane champagne

Date 2020-05-19

Calibration Type? Auto and Turbidity Calibration

Calibration Type? Both

Turbidity Calibration

19:54, 15.9, 9.99, yes

Pre Calibration 15.9

Post Calibration 9.99

Calibration Within Range Yes

Time 19:54

Auto Calibration

07:55

Please select all parameters you wish to calibrate together and enter them together at the same time in the form.

Time 07:55

Calibrated Parameters pH, Conductivity, DO

Calibration Ranges are specific to the model of the water quality meter

pH

Calibration Range for pH - +/- 0.2 S.U

pH Pre Calibration 7.84

pH Post Calibration 7

pH Calibration Within Range Yes

Conductivity

Calibration Range for Conductivity - +/- 1% of the calibration standard

Conductivity Pre Calibration 1.449

Conductivity Post Calibration 1.413

Conductivity Calibration Within Range Yes

ORP

Calibration Range for ORP- +/- 25mV

Dissolved Oxygen

Calibration Range for DO- Atmospheric

DO Pre Calibration	12.77

DO Post Calibration	10.12

DO Calibration Within Range	Yes

Turbidity

Calibration Range for Turbidity - +/- 5% of the calibration standard

Signed



Signed 2020-05-19 20:55:43 UTC

Date	2020-05-19

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/19/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER	OGB276 - pH -feb 22; OGD136 - conductivity - apr 21					
EXPIRATION DATE	04/30/2021					
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE			
PH	6.89	7.01		07:40	PH	yes
CONDUCTIVITY	971	999		07:40	CONDUCTIVITY	yes

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:



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5/19/2020

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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/19/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER	231D		
EXPIRATION DATE	09/30/2020		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.11	0.04	yes	07:54

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
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¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Waters

5/19/2020

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DATE _____

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Ysi"]
SERIAL NUMBER	02f0329ab
SAMPLER	Diane champagne
DATE	5/19/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
15.9	9.99	yes	19:54

SINGLE POINT CALIBRATION				
LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--
PH	7.84	7		07:55	PH	yes
CONDUCTIVITY	1.449	1.413		07:55	CONDUCTIVITY	yes
DO	12.77	10.12		07:55	DO	yes

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

delm

5/19/2020

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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI 556 MPS"]
SERIAL NUMBER	14F100062
SAMPLER	Desmond Bedard
DATE	5/20/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER	OGB273				
EXPIRATION DATE	02/28/2022				
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE		
PH	9.85	10.01		08:11	PH

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Out of conductivity standard



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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/20/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER	231D		
EXPIRATION DATE	09/30/2020		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.08	0.03	yes	08:00

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Bump test was within range (<.10 NTUs too)

VB

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5/20/2020

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02f0329ab, 02f0329ab, Devens, 30048392

Created	2020-05-21 19:39:47 UTC by Diane Champagne
Updated	2020-05-21 19:45:17 UTC by Diane Champagne
Location	42.557813110801, -71.5979531128626
Meter ID	02f0329ab
Equipment Serial Number	02f0329ab
Client	Devens
Project	Devens
Project Number	30048392
Name of Sampler	Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

Calibration, 2020-05-21, 07:32

Type	Calibration
Name	Champagne
Date	2020-05-21
Time	07:32
Time Zone	Eastern
Temperature (degrees C)	52
Barometer (mmHg)	766.9
DO Chart (mg/L)	10.02
Meter DO (mg/L)	10.02
Percent DO	95.9
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

Calibration, 2020-05-21, 07:42

Make sure to bracket your readings (i.e. Calibration (1000 μ S/cm), ICV (10,000 μ S/cm), ICV (100 μ S/cm)	
Type	Calibration
Name	Champagne
Date	2020-05-21
Time	07:42
Time Zone	Eastern
Units	μ S/cm
Standard Value	1000

Meter Reading	999.7
Pass/Fail	Pass
Lab/Field	Field
Percent difference	0.03
Conductivity Acceptance	Within 5%
Conductivity Acceptance criteria $\pm 5\%$	

pH DEP SOP FT 1100

Calibration

Type	Calibration
Name	Champagne
Date	2020-05-21
Time	07:35
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7.01
pH Difference	0.01
pH Acceptance	Within 0.2 standard units
mV pH	42.3
mV pH Difference	42.3
mV pH Acceptance	Within 50 mV
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Depth Sensor (Daily Calibration & ICV)

Depth Calibration

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

Do you need to calibrate other standards?	No

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI 556 MPS"]
SERIAL NUMBER	14F100062
SAMPLER	Desmond Bedard
DATE	5/21/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER	0GB273				
EXPIRATION DATE	02/28/2022				
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE		
PH	9.89	9.99		08:50	PH

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Only have pH standard available



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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/21/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER	231D		
EXPIRATION DATE	09/30/2020		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.11	0.04	--	09:03

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:



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5/21/2020

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WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI 556 MPS"]
SERIAL NUMBER	14F100062
SAMPLER	Desmond Bedard
DATE	5/22/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER	0GB875					
EXPIRATION DATE	05/22/2020					
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE- CALIBRATION	POST- CALIBRATION	WITHIN RANGE			
PH	3.86	4		08:35	PH	yes

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Only have pH standard available


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5/22/2020
DATE

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DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["Geotech portable turbidity meter"]
SERIAL NUMBER	19011937
SAMPLER	Desmond Bedard
DATE	5/22/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER	231D		
EXPIRATION DATE	09/30/2020		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.09	0.05	yes	08:20

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Bump test was also within acceptable range



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5/22/2020

DATE

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DATE

Devens

Created	2020-10-26 14:35:25 UTC by Chip Pipala
Updated	2020-10-26 15:11:44 UTC by Chip Pipala
Location	42.5583348, -71.5983187

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Devens
Model	YSI ProDSS
Serial Number(s)	15E102911, 17E101954
Sampler	Eric Fowler
Date	2020-10-26
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

10:48

Calibration Range for pH - +/- 0.2 S.U

Time	10:48
pH Pre Calibration	5.94
pH Post Calibration	7.06
pH Calibration Within Range	No

10:51

Calibration Range for pH - +/- 0.2 S.U

Time	10:51
pH Pre Calibration	8.55
pH Post Calibration	10.18
pH Calibration Within Range	Yes

10:57

Calibration Range for pH - +/- 0.2 S.U

Time	10:57
pH Pre Calibration	7.9
pH Post Calibration	7.06
pH Calibration Within Range	Yes

0.002

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	11:02
Conductivity Pre Calibration	0.002
Conductivity Post Calibration	0.002
Conductivity Calibration Within Range	Yes

250.2

Calibration Range for ORP- +/- 25mV

Time	11:08
ORP Pre Calibration	250.2
ORP Post Calibration	250.2
ORP Calibration Within Range	Yes

93.8

Calibration Range for DO- Atmospheric

Time	10:38
DO Pre Calibration	93.8
DO Post Calibration	100.4
DO Calibration Within Range	Yes

5.2

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	10:40
Turbidity Pre Calibration	5.2
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-10-26 15:11:15 UTC

Date	2020-10-26

10/26

Created	2020-10-26 12:25:12 UTC by Nicholas Burch
Updated	2020-10-26 13:06:31 UTC by Nicholas Burch
Location	42.5584203843681, -71.5979800964361

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	10/26
Client	US Army Corps Of Engineers - General
Model	YSI ProDSS
Serial Number(s)	160100431 17E101586
Sampler	Nick Burch
Date	2020-10-26
Calibration Type?	Single Point Calibration

Single Point Calibration

Expiration Date	2020-10-26
Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

08:38

Calibration Range for pH - +/- 0.2 S.U	
Time	08:38
pH Pre Calibration	3.9
pH Post Calibration	4
pH Calibration Within Range	Yes

08:39

Calibration Range for pH - +/- 0.2 S.U	
Time	08:39
pH Pre Calibration	7.12
pH Post Calibration	7
pH Calibration Within Range	Yes

08:45

Calibration Range for pH - +/- 0.2 S.U	
Time	08:45
pH Pre Calibration	9.93
pH Post Calibration	10
pH Calibration Within Range	Yes

0.951

Calibration Range for Conductivity - +/- 1% of the calibration standard	
Time	08:32
Conductivity Pre Calibration	0.951
Conductivity Post Calibration	0.948

Conductivity Calibration Within Range	Yes

246.8

Calibration Range for ORP- +/- 25mV

Time	09:03

ORP Pre Calibration	246.8

ORP Post Calibration	243.4

ORP Calibration Within Range	Yes

100.5

Calibration Range for DO- Atmospheric

Time	08:26

DO Pre Calibration	100.5

DO Post Calibration	100.5

DO Calibration Within Range	Yes

Notes	Turbidity meter is not working using LaMotte

Signed

A handwritten signature in black ink, consisting of stylized, overlapping loops and curves.

Signed 2020-10-26 12:50:53 UTC

Date	2020-10-26

10/29

Created	2020-10-29 12:48:31 UTC by Nicholas Burch
Updated	2020-10-29 13:38:03 UTC by Nicholas Burch
Location	42.5482865381474, -71.6024960386338

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	10/29
Client	US Army Corps Of Engineers - General
Serial Number(s)	160100431 17E101586
Sampler	Nick Burch
Date	2020-10-29
Calibration Type?	Single Point Calibration

Single Point Calibration

Expiration Date	2020-10-30
Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

09:28

Calibration Range for pH - +/- 0.2 S.U

Time	09:28
pH Pre Calibration	3.94
pH Post Calibration	4
pH Calibration Within Range	Yes

09:28

Calibration Range for pH - +/- 0.2 S.U

Time	09:28
pH Pre Calibration	7.1
pH Post Calibration	7
pH Calibration Within Range	Yes

09:31

Calibration Range for pH - +/- 0.2 S.U

Time	09:31
pH Pre Calibration	10.06
pH Post Calibration	10
pH Calibration Within Range	Yes

0.712

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	09:16
Conductivity Pre Calibration	0.712
Conductivity Post Calibration	0.71
Conductivity Calibration Within Range	Yes

232.8

Calibration Range for ORP- +/- 25mV

Time	09:20
ORP Pre Calibration	232.8
ORP Post Calibration	234
ORP Calibration Within Range	Yes

98.5

Calibration Range for DO- Atmospheric

Time	08:49
DO Pre Calibration	98.5
DO Post Calibration	99
DO Calibration Within Range	Yes

1.99

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	09:13
Turbidity Pre Calibration	1.99
Turbidity Post Calibration	0
Turbidity Calibration Within Range	No

Signed

A handwritten signature in black ink, consisting of several loops and a final vertical stroke.

Signed 2020-10-29 12:49:13 UTC

Date	2020-10-29

Devens

Created	2020-10-29 14:53:34 UTC by Chip Pipala
Updated	2020-10-29 15:28:48 UTC by Chip Pipala
Location	42.5596008, -71.6000753

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Devens
Serial Number(s)	15E102911, 17E101954
Sampler	Connor Rosenbaum
Date	2020-10-29
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

11:00

Calibration Range for pH - +/- 0.2 S.U

Time	11:00
pH Pre Calibration	5.75
pH Post Calibration	4
pH Calibration Within Range	Yes

11:02

Calibration Range for pH - +/- 0.2 S.U

Time	11:02
pH Pre Calibration	7.05
pH Post Calibration	7.07

11:10

Calibration Range for pH - +/- 0.2 S.U

Time	11:10
pH Pre Calibration	9.3
pH Post Calibration	10
pH Calibration Within Range	Yes

0.005

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	11:15
Conductivity Pre Calibration	0.005
Conductivity Post Calibration	0.004
Conductivity Calibration Within Range	Yes

319.1

Calibration Range for ORP- +/- 25mV

Time	11:17

ORP Pre Calibration	319.1
ORP Post Calibration	249.6
ORP Calibration Within Range	Yes

12.2

Calibration Range for DO- Atmospheric	
Time	11:22
DO Pre Calibration	12.2
DO Post Calibration	12.39
DO Calibration Within Range	Yes

600

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	11:24
Turbidity Pre Calibration	600
Turbidity Post Calibration	0
Turbidity Calibration Within Range	No
Signed	



Signed 2020-10-29 15:28:39 UTC

Date	2020-10-29

Devens

Created 2020-10-30 13:34:15 UTC by Chip Pipala

Updated 2020-10-30 14:28:33 UTC by Chip Pipala

Location 42.547058, -71.6034503

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name Devens
Serial Number(s) 15E102911, 17E101954
Sampler Connor Rosenbaum
Date 2020-10-30
Calibration Type? Single Point Calibration

Single Point Calibration

Calibrated Parameters pH, Conductivity, ORP, DO, Turbidity

09:38

Calibration Range for pH - +/- 0.2 S.U

Time 09:38
pH Pre Calibration 2.23
pH Post Calibration 4
pH Calibration Within Range Yes

09:48

Calibration Range for pH - +/- 0.2 S.U

Time 09:48
pH Pre Calibration 5.79
pH Post Calibration 7
pH Calibration Within Range Yes

10:08

Calibration Range for pH - +/- 0.2 S.U

Time 10:08
pH Pre Calibration 9.3
pH Post Calibration 10
pH Calibration Within Range Yes

0.003

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time 10:18
Conductivity Pre Calibration 0.003
Conductivity Post Calibration 0.006
Conductivity Calibration Within Range Yes

240.5

Calibration Range for ORP- +/- 25mV

Time	10:21
ORP Pre Calibration	240.5
ORP Post Calibration	246.2
ORP Calibration Within Range	Yes

11.65

Calibration Range for DO- Atmospheric	
Time	10:25
DO Pre Calibration	11.65
DO Post Calibration	11.67
DO Calibration Within Range	Yes

0.7

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	10:27
Turbidity Pre Calibration	0.7
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-10-30 14:28:25 UTC

Date	2020-10-30

10/30

Created	2020-10-30 12:46:31 UTC by Nicholas Burch
Updated	2020-10-30 13:14:20 UTC by Nicholas Burch
Location	42.555240584952, -71.5979659179112

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	10/30
Client	US Army Corps Of Engineers - General
Model	YSI ProDSS
Serial Number(s)	160100431 17E101586
Sampler	Nick Burch
Date	2020-10-30
Calibration Type?	Single Point Calibration

Single Point Calibration

Expiration Date	2020-10-31
Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

09:09

Calibration Range for pH - +/- 0.2 S.U

Time	09:09
pH Pre Calibration	3.96
pH Post Calibration	4

09:09

Calibration Range for pH - +/- 0.2 S.U

Time	09:09
pH Pre Calibration	7.08
pH Post Calibration	7

09:11

Calibration Range for pH - +/- 0.2 S.U

Time	09:11
pH Pre Calibration	10
pH Post Calibration	10

0.73

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	09:00
Conductivity Pre Calibration	0.73
Conductivity Post Calibration	0.725

234

Calibration Range for ORP- +/- 25mV

Time	09:06

ORP Pre Calibration	234
ORP Post Calibration	234
ORP Calibration Within Range	Yes

100.1

Calibration Range for DO- Atmospheric	
Time	08:51
DO Pre Calibration	100.1
DO Post Calibration	99

0.44

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	08:52
Turbidity Pre Calibration	0.44
Turbidity Post Calibration	0

Signed



Signed 2020-10-30 12:50:06 UTC

Date	2020-10-30

Devens

Created	2020-11-02 12:18:57 UTC by Chip Pipala

Updated	2020-11-02 12:57:01 UTC by Chip Pipala

Location	42.547562, -71.602625

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Devens
Serial Number(s)	15E102911, 17E101954
Sampler	Connor Rosenbaum
Date	2020-11-02
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:23

Calibration Range for pH - +/- 0.2 S.U

Time	07:23
pH Pre Calibration	4.04
pH Post Calibration	4
pH Calibration Within Range	Yes

07:30

Calibration Range for pH - +/- 0.2 S.U

Time	07:30
pH Pre Calibration	7
pH Post Calibration	7
pH Calibration Within Range	Yes

07:41

Calibration Range for pH - +/- 0.2 S.U

Time	07:41
pH Pre Calibration	9.9
pH Post Calibration	10

0.001

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	07:44
Conductivity Pre Calibration	0.001
Conductivity Post Calibration	0.002
Conductivity Calibration Within Range	Yes

62

Calibration Range for ORP- +/- 25mV

Time	07:47

ORP Pre Calibration	62
ORP Post Calibration	255.4
ORP Calibration Within Range	Yes

15.2

Calibration Range for DO- Atmospheric	
Time	07:52
DO Pre Calibration	15.2
DO Post Calibration	14.21
DO Calibration Within Range	Yes

0.8

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	07:55
Turbidity Pre Calibration	0.8
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes
Signed	



Signed 2020-11-02 12:56:49 UTC

Date	2020-11-02

19j0103220, 30048392

Created	2020-11-02 13:52:21 UTC by Diane Champagne
Updated	2020-11-02 13:56:34 UTC by Diane Champagne
Location	42.5557730812976, -71.5956368577402
Equipment Serial Number	19j0103220
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

Calibration, 2020-11-02, 08:53

Type	Calibration
Name	Diane Champagne
Date	2020-11-02
Time	08:53
Time Zone	Eastern
Temperature (degrees C)	8.8
Barometer (mmHg)	742.5
Meter DO (mg/L)	9.37
Percent DO	98.7
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

Calibration, 2020-11-02, 08:44

Make sure to bracket your readings (i.e. Calibration (1000 uS/cm), ICV (10,000 uS/cm), ICV (100 uS/cm))	
Type	Calibration
Name	Diane Champagne
Date	2020-11-02
Time	08:44
Time Zone	Eastern
Units	$\mu\text{S/cm}$
Standard Value	1.413
Meter Reading	1.414
Pass/Fail	Pass
Lab/Field	Field
Percent difference	0.07

Conductivity Acceptance	Within 5%
Conductivity Acceptance criteria $\pm 5\%$	

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-02
Time	08:20
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7.02
pH Difference	0.02
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Calibration

Type	Calibration
Name	Diane Champagne
Date	2020-11-02
Time	08:14
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	4
pH Difference	0
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Calibration

Type	Calibration
Name	Diane Champagne
Date	2020-11-02
Time	08:13
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	9.89
pH Difference	0.11
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Depth Sensor (Daily Calibration & ICV)

Depth Calibration

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

Do you need to calibrate other standards?	Yes

Other Calibrations

ORP

Desired Measurement	ORP
Units	Mv
Name	Diane Champagne
Date	2020-11-02
Time	08:09
Time Zone	Eastern
Solution Concentration	240
Meter Reading	244.3

11/2

Created 2020-11-02 13:13:41 UTC by Nicholas Burch

Updated 2020-11-02 13:53:19 UTC by Nicholas Burch

Location 42.5546285397734, -71.5986983588441

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name 11/2
Client US Army Corps Of Engineers - General
Model YSI ProDSS
Serial Number(s) 160100431 17E101586
Sampler Nick Burch
Date 2020-11-02
Calibration Type? Single Point Calibration

Single Point Calibration

Expiration Date 2020-11-03
Calibrated Parameters Turbidity, DO, ORP, Conductivity, pH

08:42

Calibration Range for pH - +/- 0.2 S.U

Time 08:42
pH Pre Calibration 3.93
pH Post Calibration 4

08:42

Calibration Range for pH - +/- 0.2 S.U

Time 08:42
pH Pre Calibration 7.01
pH Post Calibration 7

08:45

Calibration Range for pH - +/- 0.2 S.U

Time 08:45
pH Pre Calibration 9.92
pH Post Calibration 10

0.333

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time 08:34
Conductivity Pre Calibration 0.333
Conductivity Post Calibration 0.327

224.5

Calibration Range for ORP- +/- 25mV

Time 08:37

ORP Pre Calibration	224.5
ORP Post Calibration	234

98.5

Calibration Range for DO- Atmospheric

Time	08:25
DO Pre Calibration	98.5
DO Post Calibration	97.6

0.2

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	08:31
Turbidity Pre Calibration	0.2
Turbidity Post Calibration	0

Signed

A handwritten signature in black ink, appearing to be 'WB' or similar, located in the center of the page.

Signed 2020-11-02 13:14:24 UTC

Date	2020-11-02

11/4

Created	2020-11-06 12:34:52 UTC by Nicholas Burch
Updated	2020-11-06 12:37:14 UTC by Nicholas Burch
Location	42.5523078568475, -71.5924788438282

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	11/4
Client	US Army Corps Of Engineers - General
Model	YSI ProDSS
Serial Number(s)	160100431 17E101586
Sampler	Nick Burch
Date	2020-11-03
Calibration Type?	Single Point Calibration

Single Point Calibration

Expiration Date	2020-11-05
Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

08:51

Calibration Range for pH - +/- 0.2 S.U

Time	08:51
pH Pre Calibration	4.01
pH Post Calibration	4

08:51

Calibration Range for pH - +/- 0.2 S.U

Time	08:51
pH Pre Calibration	7.04
pH Post Calibration	7

08:54

Calibration Range for pH - +/- 0.2 S.U

Time	08:54
pH Pre Calibration	9.97
pH Post Calibration	10

0.648

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	08:33
Conductivity Pre Calibration	0.648
Conductivity Post Calibration	0.65

248

Calibration Range for ORP- +/- 25mV

Time	08:49

ORP Pre Calibration	248
ORP Post Calibration	234

98.8

Calibration Range for DO- Atmospheric

Time	08:26
DO Pre Calibration	98.8
DO Post Calibration	100

3.88

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	08:32
Turbidity Pre Calibration	3.88
Turbidity Post Calibration	0

Signed

A handwritten signature in black ink, consisting of stylized, overlapping loops and curves.

Signed 2020-11-06 12:37:07 UTC

Date	2020-11-04

19j0103220, Devens, 30048392

Created	2020-11-03 20:49:07 UTC by Diane Champagne
Updated	2020-11-05 13:53:44 UTC by Diane Champagne
Location	42.5482901791507, -71.6022352595549
Equipment Serial Number	19j0103220
Client	Devens
Project	Devens
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

2020-11-03, 15:49

Name	Diane Champagne
Date	2020-11-03
Time	15:49
Time Zone	Eastern
Barometer (mmHg)	756.2
Percent DO	101.7
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

2020-11-03, 16:04

Make sure to bracket your readings (i.e. Calibration (1000 uS/cm), ICV (10,000 uS/cm), ICV (100 uS/cm))

Name	Diane Champagne
Date	2020-11-03
Time	16:04
Time Zone	Eastern
Units	$\mu\text{mhos/cm}$
Standard Value	1.413
Meter Reading	1.422
Pass/Fail	Pass
Lab/Field	Field
Percent difference	0.63
Conductivity Acceptance	Within 5%
Conductivity Acceptance criteria $\pm 5\%$	

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-03
Time	15:50
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7.05
pH Difference	0.05
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-03
Time	15:51
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	3.99
pH Difference	0.01
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-03
Time	15:52
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	9.86
pH Difference	0.14
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Depth Sensor (Daily Calibration & ICV)

Depth Calibration

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

Devens

Created 2020-11-03 12:11:57 UTC by Chip Pipala

Updated 2020-11-03 12:47:47 UTC by Chip Pipala

Location 42.547512, -71.6026985

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name Devens
Serial Number(s) 15E102911, 17E101954
Sampler Connor Rosenbaum
Date 2020-11-03
Calibration Type? Single Point Calibration

Single Point Calibration

Calibrated Parameters pH, Conductivity, ORP, DO, Turbidity

07:14

Calibration Range for pH - +/- 0.2 S.U

Time 07:14
pH Pre Calibration 4
pH Post Calibration 4
pH Calibration Within Range Yes

07:21

Calibration Range for pH - +/- 0.2 S.U

Time 07:21
pH Pre Calibration 6.9
pH Post Calibration 7
pH Calibration Within Range Yes

07:33

Calibration Range for pH - +/- 0.2 S.U

Time 07:33
pH Pre Calibration 9.98
pH Post Calibration 10.2
pH Calibration Within Range Yes

0.004

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time 07:35
Conductivity Pre Calibration 0.004
Conductivity Post Calibration 0.002
Conductivity Calibration Within Range Yes

447.4

Calibration Range for ORP- +/- 25mV

Time	07:39
ORP Pre Calibration	447.4
ORP Post Calibration	248.6
ORP Calibration Within Range	Yes

13.44

Calibration Range for DO- Atmospheric	
Time	07:44
DO Pre Calibration	13.44
DO Post Calibration	13.33
DO Calibration Within Range	Yes

-0.8

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	07:46
Turbidity Pre Calibration	-0.8
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-03 12:47:40 UTC

Date	2020-11-03

19j103220, Devens, 30048392

Created	2020-11-05 13:53:49 UTC by Diane Champagne
Updated	2020-11-05 14:05:55 UTC by Diane Champagne
Location	42.5737863360369, -71.6100620292794
Equipment Serial Number	19j103220
Client	USACE
Project	Devens
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

2020-11-05, 08:54

Name	Diane Champagne
Date	2020-11-05
Time	08:54
Time Zone	Eastern
Temperature (degrees C)	13.4
Barometer (mmHg)	763.5
Percent DO	100.5
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

Calibration, 2020-11-05, 09:00

Make sure to bracket your readings (i.e. Calibration (1000 $\mu\text{S}/\text{cm}$), ICV (10,000 $\mu\text{S}/\text{cm}$), ICV (100 $\mu\text{S}/\text{cm}$)

Type	Calibration
Name	Diane Champagne
Date	2020-11-05
Time	09:00
Time Zone	Eastern
Units	$\mu\text{S}/\text{cm}$
Standard Value	1.413
Pass/Fail	Fail
Lab/Field	Field
Conductivity Acceptance	Please enter values above in standard value and meter reading
Conductivity Acceptance criteria $\pm 5\%$	

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-05
Time	09:04
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7
pH Difference	0
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-05
Time	09:07
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	4
pH Difference	0
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-05
Time	09:11
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	9.89
pH Difference	0.11
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Depth Sensor (Daily Calibration & ICV)

Depth Calibration

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

Devens

Created	2020-11-05 14:50:22 UTC by Chip Pipala
Updated	2020-11-05 15:27:57 UTC by Chip Pipala
Location	42.5572598, -71.5959943

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Devens
Serial Number(s)	15E102911, 17E101954
Sampler	Connor Rosenbaum
Date	2020-11-05
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

09:52

Calibration Range for pH - +/- 0.2 S.U

Time	09:52
pH Pre Calibration	4
pH Post Calibration	4
pH Calibration Within Range	Yes

09:57

Calibration Range for pH - +/- 0.2 S.U

Time	09:57
pH Pre Calibration	7.08
pH Post Calibration	7
pH Calibration Within Range	Yes

10:08

Calibration Range for pH - +/- 0.2 S.U

Time	10:08
pH Pre Calibration	10.15
pH Post Calibration	10.15
pH Calibration Within Range	Yes

0.001

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	10:18
Conductivity Pre Calibration	0.001
Conductivity Post Calibration	0.001
Conductivity Calibration Within Range	Yes

245.6

Calibration Range for ORP- +/- 25mV

Time	10:23
ORP Pre Calibration	245.6
ORP Post Calibration	245.9
ORP Calibration Within Range	Yes

11.02

Calibration Range for DO- Atmospheric	
Time	10:25
DO Pre Calibration	11.02
DO Post Calibration	10.99
DO Calibration Within Range	Yes

0

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	10:27
Turbidity Pre Calibration	0
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-05 15:27:48 UTC

Date	2020-11-05

11/5

Created	2020-11-06 12:37:22 UTC by Nicholas Burch
Updated	2020-11-06 13:18:13 UTC by Nicholas Burch
Location	42.5483131937117, -71.6024052865347

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	11/5
Client	US Army Corps Of Engineers - General
Model	YSI ProDSS
Serial Number(s)	160100431 17E101586
Sampler	Nick Burch
Date	2020-11-06
Calibration Type?	Single Point Calibration

Single Point Calibration

Expiration Date	2020-11-07
Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:57

Calibration Range for pH - +/- 0.2 S.U

Time	07:57
pH Pre Calibration	4.03
pH Post Calibration	4

07:58

Calibration Range for pH - +/- 0.2 S.U

Time	07:58
pH Pre Calibration	6.97
pH Post Calibration	7

07:59

Calibration Range for pH - +/- 0.2 S.U

Time	07:59
pH Pre Calibration	9.89
pH Post Calibration	10

0.771

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	07:45
Conductivity Pre Calibration	0.771
Conductivity Post Calibration	0.77

238

Calibration Range for ORP- +/- 25mV

Time	07:48

ORP Pre Calibration	238
ORP Post Calibration	234

97.5

Calibration Range for DO- Atmospheric

Time	07:38
DO Pre Calibration	97.5
DO Post Calibration	100

6.22

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	07:42
Turbidity Pre Calibration	6.22
Turbidity Post Calibration	0

Signed



Signed 2020-11-06 12:37:54 UTC

Date	2020-11-06

19j103220, Devens, 30048392

Created	2020-11-06 13:08:40 UTC by Diane Champagne
Updated	2020-11-06 13:27:08 UTC by Diane Champagne
Location	42.5569652393857, -71.5966417641114
Equipment Serial Number	19j103220
Project	Devens
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

2020-11-06, 08:09

Name	Diane Champagne
Date	2020-11-06
Time	08:09
Time Zone	Eastern
Temperature (degrees C)	13.7
Barometer (mmHg)	761
Meter DO (mg/L)	9.95
Percent DO	95.8
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

Calibration, 2020-11-06, 08:14

Make sure to bracket your readings (i.e. Calibration (1000 uS/cm), ICV (10,000 uS/cm), ICV (100 uS/cm))	
Type	Calibration
Name	Diane Champagne
Date	2020-11-06
Time	08:14
Time Zone	Eastern
Lot Number	2002400030
Expiration Date	2021-06-06
Units	$\mu\text{S/cm}$
Standard Value	1.413
Conductivity Acceptance	Please enter values above in standard value and meter reading
Conductivity Acceptance criteria $\pm 5\%$	

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-06
Time	08:25
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7
pH Difference	0
pH Acceptance	Within 0.2 standard units
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-06
Time	08:26
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	4
pH Difference	0
pH Acceptance	Within 0.2 standard units
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-06
Time	08:28
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	9.95
pH Difference	0.05
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Depth Sensor (Daily Calibration & ICV)

Depth Calibration

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

Devens

Created	2020-11-06 11:58:34 UTC by Chip Pipala
Updated	2020-11-06 12:31:52 UTC by Chip Pipala
Location	42.547557, -71.6026218

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Devens
Serial Number(s)	15E102911, 17E101954
Sampler	Connor Rosenbaum
Date	2020-11-06
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:00

Calibration Range for pH - +/- 0.2 S.U

Time	07:00
pH Pre Calibration	4
pH Post Calibration	4
pH Calibration Within Range	Yes

07:04

Calibration Range for pH - +/- 0.2 S.U

Time	07:04
pH Pre Calibration	7
pH Post Calibration	7
pH Calibration Within Range	Yes

07:11

Calibration Range for pH - +/- 0.2 S.U

Time	07:11
pH Pre Calibration	10.15
pH Post Calibration	10.15
pH Calibration Within Range	Yes

0.001

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	07:17
Conductivity Pre Calibration	0.001
Conductivity Post Calibration	0.001
Conductivity Calibration Within Range	Yes

246

Calibration Range for ORP- +/- 25mV

Time	07:21
ORP Pre Calibration	246
ORP Post Calibration	246.9
ORP Calibration Within Range	Yes

11.35

Calibration Range for DO- Atmospheric	
Time	07:27
DO Pre Calibration	11.35
DO Post Calibration	10.86
DO Calibration Within Range	Yes

0.1

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	07:30
Turbidity Pre Calibration	0.1
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-06 12:31:43 UTC

Date	2020-11-06

Created	2020-11-09 12:49:52 UTC by Chip Pipala
Updated	2020-11-09 13:20:37 UTC by Chip Pipala
Location	42.54834910393, -71.6023694538247

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Sampler	Connor Rosenbaum
Date	2020-11-09
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:53

Calibration Range for pH - +/- 0.2 S.U	
Time	07:53
pH Pre Calibration	4
pH Post Calibration	4
pH Calibration Within Range	Yes

07:59

Calibration Range for pH - +/- 0.2 S.U	
Time	07:59
pH Pre Calibration	7
pH Post Calibration	7.06
pH Calibration Within Range	Yes

08:06

Calibration Range for pH - +/- 0.2 S.U	
Time	08:06
pH Pre Calibration	10.12
pH Post Calibration	10.12
pH Calibration Within Range	Yes

0.001

Calibration Range for Conductivity - +/- 1% of the calibration standard	
Time	08:12
Conductivity Pre Calibration	0.001
Conductivity Post Calibration	0.001
Conductivity Calibration Within Range	Yes

245

Calibration Range for ORP- +/- 25mV	
Time	08:15
ORP Pre Calibration	245
ORP Post Calibration	245.7

10.1

Calibration Range for DO- Atmospheric

Time	08:18
DO Pre Calibration	10.1
DO Post Calibration	10.05
DO Calibration Within Range	Yes

0.5

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	08:19
Turbidity Pre Calibration	0.5
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-09 13:19:50 UTC

Date	2020-11-09

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30060681
MODEL	["YSI ProDSS"]
SERIAL NUMBER	16C100431
SAMPLER	Desmond Bedard
DATE	11/9/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.11	7.03	yes	08:29
Conductivity	1.197	1.399	yes	08:51
ORP	261.2	234.1	yes	08:22
DO	0.34	0.03	yes	--
Turbidity	5.24	0.9	yes	08:08

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
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¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

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DATE

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Created	2020-11-10 13:00:10 UTC by Chip Pipala
Updated	2020-11-10 13:30:54 UTC by Chip Pipala
Location	42.5483615091467, -71.6024065856557

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Sampler	Connor Rosenbaum
Date	2020-11-10
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

08:04

Calibration Range for pH - +/- 0.2 S.U	
Time	08:04
pH Pre Calibration	3.96
pH Post Calibration	4
pH Calibration Within Range	Yes

08:06

Calibration Range for pH - +/- 0.2 S.U	
Time	08:06
pH Pre Calibration	7.03
pH Post Calibration	7.03
pH Calibration Within Range	Yes

08:14

Calibration Range for pH - +/- 0.2 S.U	
Time	08:14
pH Pre Calibration	10.14
pH Post Calibration	10.07
pH Calibration Within Range	Yes

0.001

Calibration Range for Conductivity - +/- 1% of the calibration standard	
Time	08:19
Conductivity Pre Calibration	0.001
Conductivity Post Calibration	0.001
Conductivity Calibration Within Range	Yes

237.5

Calibration Range for ORP- +/- 25mV	
Time	08:21
ORP Pre Calibration	237.5
ORP Post Calibration	241.5

ORP Calibration Within Range	Yes

9.95

Calibration Range for DO- Atmospheric

Time	08:26

DO Pre Calibration	9.95

DO Post Calibration	8.95

DO Calibration Within Range	Yes

1

Calibration Range for Turbidity - +/- 5% of the calibration standard

Time	08:27

Turbidity Pre Calibration	1

Turbidity Post Calibration	0

Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-10 13:30:08 UTC

Date	2020-11-10

19j103220, Devens, 30048392

Created	2020-11-10 14:34:01 UTC by Diane Champagne
Updated	2020-11-10 14:38:22 UTC by Diane Champagne
Location	42.5552646350512, -71.5980981197875
Equipment Serial Number	19j103220
Client	USACE
Project	Devens
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

2020-11-10, 09:35

Name	Diane Champagne
Date	2020-11-10
Time	09:35
Time Zone	Eastern
Barometer (mmHg)	758.3
Meter DO (mg/L)	9.86
Percent DO	99.8
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

2020-11-10, 09:38

Make sure to bracket your readings (i.e. Calibration (1000 μ S/cm), ICV (10,000 μ S/cm), ICV (100 μ S/cm))

Name	Diane Champagne
Date	2020-11-10
Time	09:38
Time Zone	Eastern
Units	μ S/cm
Standard Value	1.413
Meter Reading	1.415
Pass/Fail	Pass
Lab/Field	Field
Percent difference	0.14
Conductivity Acceptance	Within 5%

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-10
Time	09:41
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7.02
pH Difference	0.02
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50

Name	Diane Champagne
Date	2020-11-10
Time	09:44
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	4
pH Difference	0
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50

Name	Diane Champagne
Date	2020-11-10
Time	09:48
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	9.99
pH Difference	0.01
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50 **Depth Sensor (Daily Calibration & ICV)****Depth Calibration**Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30060681
MODEL	
SERIAL NUMBER	16C100431
SAMPLER	Desmond Bedard
DATE	11/10/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	6.89	7.01	yes	08:43
Conductivity	2.043	1.412	yes	--
ORP	216.1	229.4	yes	08:16
DO	0.18	0.07	yes	08:49
Turbidity	2.45	0.11	yes	08:30

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
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¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

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11/10/2020

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DATE

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BY

DATE

Fort Devens

Created	2020-11-11 12:02:15 UTC by Chip Pipala
Updated	2020-11-11 12:33:19 UTC by Chip Pipala
Location	42.548358282114, -71.6025375109833

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Fort Devens
Sampler	Connor Rosenbaum
Date	2020-11-11
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:03

Calibration Range for pH - +/- 0.2 S.U

Time	07:03
pH Pre Calibration	4.07
pH Post Calibration	4
pH Calibration Within Range	Yes

07:10

Calibration Range for pH - +/- 0.2 S.U

Time	07:10
pH Pre Calibration	7
pH Post Calibration	7.05
pH Calibration Within Range	Yes

07:18

Calibration Range for pH - +/- 0.2 S.U

Time	07:18
pH Pre Calibration	10.13
pH Post Calibration	10.13
pH Calibration Within Range	Yes

0.001

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	07:24
Conductivity Pre Calibration	0.001
Conductivity Post Calibration	0.001
Conductivity Calibration Within Range	Yes

242.7

Calibration Range for ORP- +/- 25mV

Time	07:27

ORP Pre Calibration	242.7
ORP Post Calibration	242.7
ORP Calibration Within Range	Yes

8.67

Calibration Range for DO- Atmospheric	
Time	19:30
DO Pre Calibration	8.67
DO Post Calibration	8.54
DO Calibration Within Range	Yes

-0.1

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	07:32
Turbidity Pre Calibration	-0.1
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-11 12:33:13 UTC

Date	2020-11-11

19jj103220, Devens, 30048392

Created	2020-11-11 12:42:12 UTC by Diane Champagne
Updated	2020-11-11 13:07:58 UTC by Diane Champagne
Location	42.548285652923, -71.6024595592838
Equipment Serial Number	19jj103220
Client	USACE
Project	Devens
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

2020-11-11, 07:46

Name	Diane Champagne
Date	2020-11-11
Time	07:46
Time Zone	Eastern
Temperature (degrees C)	17.4
Barometer (mmHg)	754.8
Percent DO	99.4
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

2020-11-11, 07:47

Make sure to bracket your readings (i.e. Calibration (1000 $\mu\text{S}/\text{cm}$), ICV (10,000 $\mu\text{S}/\text{cm}$), ICV (100 $\mu\text{S}/\text{cm}$)

Name	Diane Champagne
Date	2020-11-11
Time	07:47
Time Zone	Eastern
Units	$\mu\text{S}/\text{cm}$
Standard Value	1.413
Meter Reading	1.522
Pass/Fail	Pass
Lab/Field	Field
Percent difference	7.43
Conductivity Acceptance	Out of range

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-11
Time	07:56
Time Zone	Eastern
Expiration Date	2020-11-11
pH Buffer SU	7
Meter Reading (SU)	7.04
pH Difference	0.04
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-11
Time	07:56
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	4.01
pH Difference	0.01
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Name	Diane Champagne
Date	2020-11-11
Time	08:03
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	10
pH Difference	0
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field
pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50	

Depth Sensor (Daily Calibration & ICV)**Depth Calibration**

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	16C100431
SAMPLER	Desmond Bedard
DATE	11/11/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	6.95	6.99	yes	08:16
Conductivity	1.498	1.414	yes	08:26
ORP	211.2	234.7	yes	08:50
DO	0.09	0	yes	08:30
Turbidity	1.76	0.32	yes	09:01

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

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11/11/2020

SIGNED

DATE

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DATE

Fort Devens

Created	2020-11-12 12:04:48 UTC by Chip Pipala

Updated	2020-11-12 12:37:36 UTC by Chip Pipala

Location	42.5483403448412, -71.6024546139609

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Fort Devens
Sampler	Connor Rosenbaum
Date	2020-11-12
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:05

Calibration Range for pH - +/- 0.2 S.U

Time	07:05
pH Pre Calibration	4.64
pH Post Calibration	4
pH Calibration Within Range	Yes

07:16

Calibration Range for pH - +/- 0.2 S.U

Time	07:16
pH Pre Calibration	7.03
pH Post Calibration	7.03
pH Calibration Within Range	Yes

07:21

Calibration Range for pH - +/- 0.2 S.U

Time	07:21
pH Pre Calibration	10.08
pH Post Calibration	10.08
pH Calibration Within Range	Yes

0

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	07:28
Conductivity Pre Calibration	0
Conductivity Post Calibration	0
Conductivity Calibration Within Range	Yes

237.5

Calibration Range for ORP- +/- 25mV

Time	07:31

ORP Pre Calibration	237.5
ORP Post Calibration	240.3
ORP Calibration Within Range	Yes

8.61

Calibration Range for DO- Atmospheric	
Time	07:34
DO Pre Calibration	8.61
DO Post Calibration	8.23
DO Calibration Within Range	Yes

-0.1

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	07:37
Turbidity Pre Calibration	-0.1
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes
Signed	



Signed 2020-11-12 12:37:29 UTC

Date	2020-11-12

19j103220, Devens, 30048392

Created	2020-11-12 12:50:55 UTC by Diane Champagne
Updated	2020-11-12 13:21:39 UTC by Diane Champagne
Location	42.5483651552746, -71.6024077591222
Equipment Serial Number	19j103220
Client	USACE
Project	Devens
Project Number	30048392
Name of Sampler	Diane Champagne

Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth). (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification known?	N/A

DO DEP SOP FT 1500

2020-11-12, 07:47

Name	Diane Champagne
Date	2020-11-12
Time	07:47
Time Zone	Eastern
Temperature (degrees C)	18
Barometer (mmHg)	752.6
Percent DO	98.2
Probe Charge	N/A
Probe Gain	N/A
Pass/Fail	Pass
Lab/Field	Field

DO Acceptance criteria from Table ± 0.3 mg/L. Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75. Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Specific Conductivity FT 1200

2020-11-12, 08:05

Make sure to bracket your readings (i.e. Calibration (1000 μ S/cm), ICV (10,000 μ S/cm), ICV (100 μ S/cm))

Name	Diane Champagne
Date	2020-11-12
Time	08:05
Time Zone	Eastern
Units	μ S/cm
Standard Value	1.413
Meter Reading	1.389
Pass/Fail	Pass
Lab/Field	Field
Percent difference	1.71
Conductivity Acceptance	Within 5%

pH DEP SOP FT 1100

Name	Diane Champagne
Date	2020-11-12
Time	08:10
Time Zone	Eastern
pH Buffer SU	7
Meter Reading (SU)	7.03
pH Difference	0.03
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50

Name	Diane Champagne
Date	2020-11-12
Time	08:10
Time Zone	Eastern
pH Buffer SU	4
Meter Reading (SU)	4
pH Difference	0
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50

Name	Diane Champagne
Date	2020-11-12
Time	08:17
Time Zone	Eastern
pH Buffer SU	10
Meter Reading (SU)	10.09
pH Difference	0.09
pH Acceptance	Within 0.2 standard units
Pass/Fail	Pass
Lab/Field	Field

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ; mV pH 4 Range $+180 \pm 50$; mV pH 10 Range -180 ± 50

Depth Sensor (Daily Calibration & ICV)**Depth Calibration**

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or $\pm 0.05\text{m}$, whichever is greater.

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	16C100431
SAMPLER	Desmond Bedard
DATE	11/12/2020

TURBIDITY CALIBRATION

TURBIDITY CALIBRATION			
CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	6.95	6.99	yes	08:03
Conductivity	1.442	1.413	yes	08:15
ORP	237.4	233.9	yes	--
DO	0.16	0	yes	08:41
Turbidity	0.18	0.05	yes	08:25

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES ¹	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
--	--	--	--	--	--	--

¹ CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

[Signature]

11/12/2020

SIGNED

DATE

CHECKED
BY

DATE

Fort Devens

Created	2020-11-13 12:05:07 UTC by Chip Pipala

Updated	2020-11-13 12:46:40 UTC by Chip Pipala

Location	42.5482828030759, -71.602417901225

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Fort Devens
Sampler	Connor Rosenbaum
Date	2020-11-13
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:05

Calibration Range for pH - +/- 0.2 S.U

Time	07:05
pH Pre Calibration	4
pH Post Calibration	4
pH Calibration Within Range	Yes

07:25

Calibration Range for pH - +/- 0.2 S.U

Time	07:25
pH Pre Calibration	6.84
pH Post Calibration	7.08
pH Calibration Within Range	Yes

07:27

Calibration Range for pH - +/- 0.2 S.U

Time	07:27
pH Pre Calibration	10.2
pH Post Calibration	10.21
pH Calibration Within Range	Yes

0.005

Calibration Range for Conductivity - +/- 1% of the calibration standard

Time	07:39
Conductivity Pre Calibration	0.005
Conductivity Post Calibration	0.004
Conductivity Calibration Within Range	Yes

255.5

Calibration Range for ORP- +/- 25mV

Time	07:41

ORP Pre Calibration	255.5
ORP Post Calibration	251.9
ORP Calibration Within Range	Yes

9.91

Calibration Range for DO- Atmospheric	
Time	07:44
DO Pre Calibration	9.91
DO Post Calibration	9.57
DO Calibration Within Range	Yes

0.4

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	07:46
Turbidity Pre Calibration	0.4
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed



Signed 2020-11-13 12:46:35 UTC

Date	2020-11-13

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-02	Date	5/15/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 74
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	19.29	Total Depth (ft-bmp)	34	Water Column(ft)	15
				Gallons in Well	2.39
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:10	Volumes Purged		Sample ID	PZ-12-02 -spr20
Purge Start	#Error	Gallons Purged		Sampled by	Diane Champagne
Purge End	15:21			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:20		220	19.29	0.00	5.03	0.713	28.9	1.18	14.36	241.1	Pale orange	No
14:25	5	220	19.29	0.00	4.84	0.711	27.2	0.87	15.14	225.7	Pale orange	No
14:30	5	220	19.29	0.00	4.67	0.717	15.6	0.57	15.15	211.8	Pale orange	No
14:35	5	220	19.29	0.00	4.62	0.714	14	0.55	13.96	203.7	Pale orange	No
14:41	6	220	19.29	0.00	5.05	0.709	8.04	0.55	13.26	153.4	Pale orange	No
14:45	4	220	19.29	0.00	5.15	0.706	7.88	0.58	13.74	142.4	Pale orange	No
14:50	5	220	19.29	0.00	5.27	0.707	8.04	0.57	13.43	127.9	Pale orange	No
14:55	5	220	19.29	0.00	5.5	0.707	7.61	0.57	13.85	104.08	Pale orange	No
15:00	5	220	19.29	0.00	5.53	0.709	7.88	0.56	13.54	100.1	Pale orange	No
15:05	5	220	19.29	0.00	5.49	0.71	7.77	0.56	13.66	99.1	Pale orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Landfill east	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-07	Date	5/15/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 69
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	NA
Static Water Level (ft-bmp)	27.3	Total Depth (ft-bmp)	30	Water Column(ft)	3
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	#Error	Volumes Purged		Sample ID	PZ-12-07-SPR20
Purge Start	12:32	Gallons Purged		Sampled by	Diane Champagne
Purge End	14:05			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:35		220	23.24	0.00	6.03	0.07	333	10.04	12.52	217.8	Orange	No
12:41	6	220	23.24	0.00	5.08	0.193	130	9.96	12.36	279.6	Orange	No
12:45	4	220	23.24	0.00	5.14	0.226	114	7.79	12.44	288.7	Orange	No
12:51	6	220	23.24	0.00	5.12	0.225	104	6.77	12.82	298.4	Orange	No
12:55	4	220	23.24	0.00	4.66	0.224	74.3	6.44	12.4	325.4	Orange	No
13:00	5	220	23.24	0.00	5.07	0.226	60.9	6.79	12.34	330.9	Orange	No
13:05	5	220	23.24	0.00	5.11	0.222	50.1	6.54	12.27	330.2	Orange	No
13:10	5	220	23.24	0.00	5.22	0.224	37.7	6.47	11.89	321	Orange	No
13:16	6	220	23.24	0.00	5.46	0.226	27.8	6.7	12.06	301.1	Orange	No
13:20	4	220	23.24	0.00	5.47	0.228	18.8	7.83	12.16	295.6	Orange	No
13:25	5	220	23.24	0.00	5.49	0.226	25.5	7.85	12.37	288.6	Orange	No
13:30	5	220	23.24	0.00	5.46	0.222	7.68	8.03	12.28	287.7	Orange	No
13:35	5	220	23.24	0.00	5.86	0.227	7.2	8.59	12.09	253.2	Orange	No
13:40	5	220	23.24	0.00	5.57	0.225	7.77	7.98	12.63	262.5	Orange	No
13:45	5	220	23.24	0.00	5.47	0.228	7.52	7.61	12.75	272.7	Orange	No
13:50	5	220	23.24	0.00	5.53	0.225	7.44	7.45	12.65	272.1	Orange	No
13:55	5	220	23.24	0.00	5.44	0.227	7.46	7.78	12.48	273.6	Orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Overlooking pond to the east	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-09	Date	5/15/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 57
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	23.2	Total Depth (ft-bmp)	32.9	Water Column(ft)	10
				Gallons in Well	1.58
MP Elevation		Pump Intake (ft-bmp)	20	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:55	Volumes Purged		Sample ID	PZ-12-09 -SPR20
Purge Start	#Error	Gallons Purged		Sampled by	Diane Champagne
Purge End	12:17			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:40		220	23.24	0.00	6.09	0.205	81.5	1.48	12.65	131.5		
10:45	5	220	23.24	0.00	6	0.204	89.9	1.28	12.54	135.9		
10:50	5	220	23.24	0.00	5.61	0.198	48.9	1.11	12.34	156.9		
10:55	5	220	23.24	0.00	5.6	0.197	38.7	1.09	12.36	167.2		
11:00	5	220	23.24	0.00	5.6	0.197	30.8	1.15	12.34	173		
11:05	5	220	23.24	0.00	5.61	0.197	24.4	1.4	12.35	180		
11:10	5	220	23.24	0.00	5.53	0.195	24.1	1.87	12.49	190.8		
11:15	5	220	23.24	0.00	5.36	0.192	13.3	2.46	12.61	204.4		
11:21	6	220	23.24	0.00	5.09	0.189	13	3.62	12.54	228.8		
11:25	4	220	23.24	0.00	4.74	0.186	5.63	4.62	12.15	265.6		
11:30	5	220	23.24	0.00	4.84	0.181	6.27	5.75	12.2	270		
11:35	5	220	23.24	0.00	4.77	0.181	5.83	5.32	12.15	281.6		
11:40	5	220	23.24	0.00	4.78	0.177	4.54	5.54	12.58	282.5		
11:45	5	220	23.24	0.00	4.68	0.176	5.1	5.85	12.49	286.3		
11:50	5	220	23.24	0.00	4.7	0.177	4.89	5.94	12.37	284.9		

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Landfill near sand	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-10	Date	5/15/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 57
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	20.9	Total Depth (ft-bmp)	32	Water Column(ft)	11
				Gallons in Well	1.8
MP Elevation		Pump Intake (ft-bmp)	26	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	10:05	Volumes Purged		Sample ID	PZ-12-10 -spr20
Purge Start	#Error	Gallons Purged		Sampled by	Diane Champagne
Purge End	10:36			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:05		220	20.94	0.00	6.92	0.069	6.28	9.78	10.32	98.6		
09:10	5	220	20.94	0.00	6.81	0.069	6.02	10.58	10.55	101.2		
09:15	5	220	20.96	0.00	6.6	0.069	3.01	10.41	10.76	104.1		
09:20	5	220	20.96	0.00	6.52	0.069	2.15	10.31	10.82	107.3		
09:25	5	220	20.96	0.00	6.47	0.069	0.51	10.18	10.71	109.8		
09:30	5	220	20.96	0.00	6.36	0.068	0.56	10.32	10.6	114.9		
09:35	5	220	20.96	0.00	6.31	0.068	2.22	10.28	10.89	115.4		
09:41	6	220	20.96	0.00	6.34	0.068	0.02	10.4	11.15	115.1		
09:45	4	220	20.96	0.00	6.32	0.068	2.32	10.53	11.05	116.2		
09:50	5	220	20.96	0.00	6.29	0.068	1.52	10.37	11.16	118.5		
09:55	5	220	20.96	0.00	6.26	0.068	2.12	10.48	11.41	119.6		
10:01	6	220	20.96	0.00	6.23	0.068	2.46	10.87	11.22	121.7		

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Location: Landfill east	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-07-03	Date	5/15/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	16C, Sunny, Light Breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	18.99	Total Depth (ft-bmp)	32.6	Water Column(ft)	14
				Gallons in Well	2.21
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:15	Volumes Purged		Sample ID	SHM-07-03-SPR20
Purge Start	13:45	Gallons Purged		Sampled by	Desmond Bedard
Purge End	#Error			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:45		160	18.99	0.00	5.69	0.391	289	9.93	14.5	338.7	None; clear	None
13:50	5	150	19.79	0.00	3.38	0.38	270	7.67	14.02	421.7	None; clear	None
13:55	5	150	19.91	0.00	3.62	0.376	238	6.26	13.52	399.7	None; clear	None
14:00	5	150	19.98	0.00	3.69	0.379	189	5.9	13.51	391.7	None; clear	None
14:05	5	150	19.98	0.00	4.53	0.41	134	5.45	14.01	320	None; clear	None
14:10	5	150	19.98	0.00	5.11	0.41	95.2	5.44	13.59	294.8	None; clear	None
14:15	5	150	19.98	0.00	5.23	0.418	72.6	5.43	13.68	288.9	None; clear	None
14:20	5	150	19.98	0.00	5.11	0.423	69.2	5.4	13.68	299.1	None; clear	None
14:25	5	150	19.98	0.00	5.44	0.424	55.2	5.47	13.53	283.6	None; clear	None
14:30	5	150	19.98	0.00	5.4	0.428	49.9	5.45	13.51	286.7	None; clear	None
14:35	5	150	19.98	0.00	5.49	0.435	33.5	5.48	13.61	281.2	None; clear	None
14:40	5	150	19.98	0.00	5.35	0.432	45.7	5.46	13.7	301.4	None; clear	None
14:45	5	150	19.98	0.00	5.41	0.434	27.6	5.51	13.78	291.9	None; clear	None
14:50	5	150	20	0.00	5.39	0.431	30.1	5.55	13.76	296.2	None; clear	None
14:55	5	150	20.03	0.00	5.57	0.434	22.1	5.56	13.66	299.2	None; clear	None
15:00	5	150	20.06	0.00	5.58	0.436	19.8	5.6	13.73	291.3	None; clear	None
15:05	5	150	20.08	0.00	5.59	0.438	18.9	5.59	13.72	291.6	None; clear	None
15:10	5	150	20.08	0.00	5.62	0.443	19.1	5.58	13.76	290.1	None; clear	None

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Dangerous road; view block by curve and slope; medium tractor trailer traffic

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good; wells suction cap could use a replacement	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: nA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-07B		Date	5/15/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	60, cloud
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	21.42	Total Depth (ft-bmp)	80	Water Column(ft)	59	Gallons in Well	9.52
MP Elevation		Pump Intake (ft-bmp)	75	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:30	Volumes Purged		Sample ID	SHP-2016-07B-SPR20	Sampled by	Gabriel O'Connor
Purge Start	08:49	Gallons Purged					
Purge End	09:56						
Replicate/ Code No.							

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:52		100	20.9	0.00	7.68	236	5.25	5.97	12.75	31.7	Clear	No
08:57	5	100	21.9	0.13	7.31	203	2.71	5.11	11.77	32.1	Clear	No
09:02	5	50	22.85	0.20	7.22	204	4.58	4.66	12.29	24.7	Clear	No
09:07	5	100	23.05	0.26	7.2	210	1.99	4.66	12.78	16.8	Clear	No
09:12	5	100	23.27	0.33	7.16	210	1.27	4.47	13.03	16.8	Clear	No
09:16	4	100	23.6	0.40	7.13	215	0.02	4.37	13.46	19	Clear	No
09:20	4	100	23.86	0.46	7.1	214	0.02	4.47	13.41	16.9	Clear	No
09:24	4	100	23.86	0.53	7.09	211	0.02	4.47	13.26	16.7	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Larger of two inner casings is B		

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-1A		Date	5/15/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	14.05	Total Depth (ft-bmp)	23	Water Column(ft)	9	Gallons in Well	0.36
MP Elevation		Pump Intake (ft-bmp)	18	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	12:00	Volumes Purged		Sample ID	SHP-2016-1A-SPR20	Sampled by	Gabriel O'Connor
Purge Start	11:03	Gallons Purged					
Purge End	12:30			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:04		100	14.06	0.00	5.53	43	18	8.94	12.16	21.5	Clear	No
11:09	5	100	14.06	0.26	5.94	32	65.4	10.53	11.91	83.3	Clear	No
11:14	5	100	14.09	0.53	5.77	43	63.8	10.75	11.34	107.2	Clear	No
11:19	5	100	14.09	0.53	5.69	43	40	10.73	11.55	123	Clear	No
11:24	5	100	14.1	0.53	5.61	42	14	10.52	11.98	140	Clear	No
11:29	5	100	14.1	0.66	5.59	42	6.7	10.63	11.45	154.7	Clear	No
11:34	5	100	14.1	0.79	5.59	42	4.41	10.49	11.47	160.7	Clear	No
11:39	5	100	14.1	0.79	5.58	42	4.98	10.52	11.37	164.2	Clear	No
11:43	4	100	14.1	0.92	5.59	43	0.02	10.54	11.5	182.9	Clear	No
11:47	4	100	14.1	1.06	5.62	42	0.02	10.67	11.51	180.3	Clear	No
11:52	5	100	14.1	1.19	5.59	43	2.37	10.53	11.47	189.6	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Cond units uS/cm

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHP

Well Locked at Arrival: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Condition of Well: Good

Well Locked at Departure: no

Well Completion: Stick-up

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-1B		Date	5/15/2020
Project Name/Location	Devens, Massachusetts				Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material NA
Static Water Level (ft-bmp)	15.14	Total Depth (ft-bmp)	85	Water Column(ft)	70	Gallons in Well 11.35
MP Elevation		Pump Intake (ft-bmp)	80	Purge Method		Sample Method
Sample Time	#Error	Volumes Purged		Sample ID	NA	Sampled by Gabriel O'Connor
Purge Start	#Error	Gallons Purged		Replicate/ Code No.		
Purge End	#Error					

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	_____	Well Locked at Arrival:	_____
Condition of Well:	_____	Well Locked at Departure:	_____
Well Completion: NA	_____	Key Number To Well: NA	_____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Client:		USACE					
Project Name/Location:		Devens, Massachusetts					
Date(s):		5/18/2020					
Sampler(s):		Desmond Bedard Gabriel O'Connor					
Equipment:		water probe					
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	PID (ppmv)	Remarks
SHL-10	5/18/2020	07:51:00	30.67	38.85	--	--	
PZ-12-09	5/18/2020	07:54:00	23.29	33.45	--	--	
PZ-12-10	5/18/2020	07:58:00	21.02	23.3	--	--	
SHL-19	5/18/2020	08:08:00	23.15	33.8	--	--	
PZ-12-07	5/18/2020	08:11:00	27.35	33.4	--	--	
PZ-12-08	5/18/2020	08:15:00	23.88	32.45	--	--	
SHL-4	5/18/2020	08:24:00	10.13	14.65	--	--	
PZ-12-05	5/18/2020	08:27:00	21.1	34.95	--	--	
PZ-12-06	5/18/2020	08:37:00	22.46	36.1	--	--	
SHM-11-02	5/18/2020	08:41:00	21.55	57.65	--	--	No PVC visible within steel casing; needs new lock (current on is too small to lock)
SHM-05-40X	5/18/2020	08:45:00	13.66	33.45	--	--	
SHM-07-05X	5/18/2020	08:51:00	2.75	64.73	--	--	
SHP-01-38A	5/18/2020	08:51:00	3.59	8.85	--	--	
SHL-11	5/18/2020	09:00:00	18.36	29.85	--	--	
SHL-20	5/18/2020	09:04:00	17.11	51.55	--	--	
PZ-12-03	5/18/2020	09:09:00	19.36	36.8	--	--	Lock needs replacement (too small to close)
PZ-12-04	5/18/2020	09:14:00	18.73	36.95	--	--	
SHM-13-07	5/18/2020	09:16:00	18.54	34.98	--	--	
PZ-12-01	5/18/2020	09:18:00	20.2	37.6	--	--	
PZ-12-02	5/18/2020	09:20:00	19.29	35.25	--	--	
SHM-13-03	5/18/2020	09:27:00	5.11	52.3	--	--	
SHP-01-37X	5/18/2020	09:29:00	3.29	10.25	--	--	
SHP-01-36X	5/18/2020	09:34:00	5.13	11	--	--	Lock missing

SHM-13-06	5/18/2020	09:39:00	17.07	45.53	--	--	
SHM-13-08	5/18/2020	09:51:00	20.06	64.93	--	--	
SHM-11-06	5/18/2020	09:55:00	18.97	35.8	--	--	
SHP-2016-07A	5/18/2020	10:05:00	14.91	31.8	--	--	
SHM-13-04	5/18/2020	10:08:00	18.54	29.82	--	--	
SHM-05-41B	5/18/2020	10:19:00	9.96	63.96	--	--	
SHM-05-41C	5/18/2020	10:22:00	10.31	87.35	--	--	
EPA-PZ-2012-2B	5/18/2020	10:27:00	9.98	14.9	--	--	
EPA-PZ-2012-2A	5/18/2020	10:31:00	9.94	27.9	--	--	
SHM-96-5B	5/18/2020	10:36:00	5.79	89.75	--	--	
SHP-2016-3B	5/18/2020	10:42:00	10.55	87.38	--	--	Well labeled SHP-PZ-16-03A/B.
EPA-PZ-2012-1B	5/18/2020	10:44:00	10.09	15.15	--	--	
EPA-PZ-2012-1A	5/18/2020	10:47:00	10.38	27.6	--	--	
EPA-PZ-2012-5A	5/18/2020	10:53:00	11.33	27.15	--	--	
SHP-2016-2B	5/18/2020	10:53:00	13.35	87.68	--	--	SHP-PZ-16-02A/B label
EPA-PZ-2012-5B	5/18/2020	10:57:00	6.63	12.6	--	--	
SHP-2016-06C	5/18/2020	11:15:00	19.74	132.95	--	--	
SHP-2016-4A	5/18/2020	11:17:00	17.41	32.57	--	--	
SHP-2017-02	5/18/2020	11:25:00	18.58	94.4	--	--	
SHP-2016-4B	5/18/2020	11:28:00	17.13	92.35	--	--	
SHP-2016-2A	5/18/2020	11:34:00	13.27	27.19	--	--	
EW-04	5/18/2020	11:43:00	44.38	102	--	--	Well vault is messy; wiring inhibits well cap from attaching properly; heavy garbage smell emanating from well; water table appears lower than at surrounding wells; probe covered in rust colored liquid during exit
SHP-2016-5B	5/18/2020	11:51:00	14.29	92.35	--	--	
SHP-2016-5A	5/18/2020	11:55:00	14.35	32.55	--	--	

SHP-2016-06A	5/18/2020	11:59:00	19.68	111.9	--	--	
SHP-2016-06B	5/18/2020	12:03:00	26.31	85.9	--	--	
SHP-2016-1A	5/18/2020	12:09:00	14.3	25.85	--	--	Well lock missing
SHM-93-22B	5/18/2020	12:18:00	6.67	94.15	--	--	
SHP-2016-1B	5/18/2020	12:21:00	16.19	85.9	--	--	Well lock missing
SHP-2016-3A	5/18/2020	12:24:00	10.81	27.28	--	--	
EPA-PZ-2012-3A	5/18/2020	12:29:00	9.81	26.68	--	--	
EPA-PZ-2012-3B	5/18/2020	12:33:00	9.68	76.76	--	--	
EPA-PZ-2012-4B	5/18/2020	12:39:00	13.85	76.73	--	--	
EW-01	5/18/2020	12:39:00	26.62	63.15	--	--	
EPA-PZ-2012-4A	5/18/2020	12:45:00	13.94	27.74	--	--	
SHP-2017-01	5/18/2020	12:47:00	17.62	79.15	--	--	
EPA-PZ-2012-6A	5/18/2020	12:59:00	21.49	33.06	--	--	
EPA-PZ-2012-6B	5/18/2020	13:04:00	21.39	27.72	--	--	
SHP-2016-07B	5/18/2020	14:23:00	21.74	80.65	--	--	
EPA-PZ-2012-7B	5/18/2020	14:24:00	21.37	64.3	--	--	
EPA-PZ-2012-7A	5/18/2020	14:32:00	21.32	29.12	--	--	
SHM-07-03	5/18/2020	15:40:00	19.03	32.57	--	--	

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-01	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Overcast 59
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	20.2	Total Depth (ft-bmp)	34	Water Column(ft)	14
				Gallons in Well	2.24
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	09:20	Volumes Purged		Sample ID	PZ-12-01-SPR20
Purge Start	08:31	Gallons Purged		Sampled by	Diane Champagne
Purge End	09:27			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:35		200	20.21	0.00	7.31	0.601	25.8	1.21	11.52	-3.1		
08:40	5	200	20.21	0.00	7.06	0.6	23.9	0.86	11.39	-5.5		
08:44	4	200	20.21	0.00	6.84	0.6	7.61	0.7	11.37	-5.6		
08:50	6	200	20.21	0.00	6.74	0.601	4.07	0.63	11.38	-5.2		
08:56	6	200	20.21	0.00	6.5	0.601	3.45	0.48	11.34	-3		
09:00	4	200	20.21	0.00	6.62	0.601	3.87	0.41	11.27	-3.4		
09:05	5	200	20.21	0.00	6.57	0.602	0.53	0.46	11.31	-2.9		
09:10	5	200	20.21	0.00	6.49	0.601	0.83	0.44	11.34	-0.4		
09:15	5	200	20.21	0.00	6.49	0.602	0.81	0.43	11.32	-1.4		

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-03	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Overcast 59
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	19.46	Total Depth (ft-bmp)	36.8	Water Column(ft)	17
				Gallons in Well	2.82
MP Elevation		Pump Intake (ft-bmp)	33	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	12:25	Volumes Purged		Sample ID	PZ-12-03 -Spr20
Purge Start	#Error	Gallons Purged		Sampled by	Diane Champagne
Purge End	12:40			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:49		200	19.46	0.00	6.28	0.002	81	0.95	12.4	45.1	Pale orange	No
11:56	7	200	19.47	0.00	6.38	0.575	61.8	0.86	11.85	30	Pale orange	No
12:00	4	200	19.46	0.00	6.22	0.576	44.4	0.42	11.72	30.7	Pale orange	No
12:06	6	200	19.46	0.00	6.23	0.575	41.5	0.35	11.82	22.7	Pale orange	No
12:10	4	200	19.46	0.00	6.25	0.575	40.7	0.33	11.92	18.1	Pale orange	No
12:16	6	200	19.46	0.00	6.26	0.575	39.9	0.31	12.03	13.7	Pale orange	No
12:21	5	200	19.46	0.00	6.29	0.574	39.2	0.32	12.22	9.8	Pale orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: no
Condition of Well: Good	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-04	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Overcast 59
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	18.8	Total Depth (ft-bmp)	36.8	Water Column(ft)	18
				Gallons in Well	2.92
MP Elevation		Pump Intake (ft-bmp)	33	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	13:20	Volumes Purged		Sample ID	PZ-12-04 -SPR20
Purge Start	12:44	Gallons Purged		Sampled by	Diane Champagne
Purge End	13:32			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:45		200	18.8	0.00	6.17	0.582	23.8	1.45	12.72	45.7	Pale orange	No
12:51	6	200	18.78	0.00	6.01	0.585	22.6	0.54	12.4	43.4	Pale orange	No
12:55	4	200	18.8	0.00	5.97	0.585	13.5	0.44	12.28	40.4	Pale orange	No
13:00	5	200	18.78	0.00	6.08	0.581	8.3	0.4	12.49	30.1	Pale orange	No
13:05	5	200	18.78	0.00	6.06	0.574	8.53	0.35	12.44	27.1	Pale orange	No
13:11	6	200	18.78	0.00	6.05	0.576	8.96	0.33	12.55	22.8	Pale orange	No
13:14	3	200	18.78	0.00	6.1	0.585	7.99	0.32	12.61	17.9	Pale orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: no
Condition of Well: Good	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-05	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 74
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	20.41	Total Depth (ft-bmp)	36	Water Column(ft)	16
				Gallons in Well	2.53
MP Elevation		Pump Intake (ft-bmp)	34	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	16:15	Volumes Purged		Sample ID	PZ-12-05 -SPR20
Purge Start	15:35	Gallons Purged		Sampled by	Diane Champagne
Purge End	16:28			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:39		200	21.4	0.00	6.07	0.175	6.73	1.41	13.33	59.2	Pale orange	No
15:44	5	200	21.41	0.00	5.99	0.171	5.61	0.58	13.42	59.9	Pale orange	No
15:49	5	200	21.41	0.00	6.07	0.169	5.84	0.46	13.67	49.9	Pale orange	No
15:54	5	200	21.41	0.00	6.11	0.17	5.74	0.42	13.44	52.7	Pale orange	No
15:59	5	200	21.41	0.00	6.04	0.167	5.55	0.39	13.5	48.8	Pale orange	No
16:02	3	200	21.41	0.00	6.01	0.168	5.26	0.36	13.42	50.1	Pale orange	No
16:06	4	200	21.4	0.00	6.08	0.168	5.11	0.35	13.74	44	Pale orange	No
16:12	6	200	21.4	0.00	6.08	0.166	5.31	0.34	13.61	46.7	Pale orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-06	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Overcast 59
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	22.41	Total Depth (ft-bmp)	35	Water Column(ft)	13
MP Elevation		Pump Intake (ft-bmp)	33	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:00	Volumes Purged		Sample ID	PZ-12-06-SPR20
Purge Start	13:45	Gallons Purged		Replicate/ Code No.	SHL-Dup02-SPR20
Purge End	15:13				

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:45		200	22.51	0.00	5.97	0.285	41.1	0.86	12.05	70.7	Pale orange	No
13:50	5	200	22.51	0.00	5.73	0.284	25.4	0.6	12.03	75.2	Pale orange	No
13:55	5	200	22.51	0.00	5.66	0.287	20.1	0.5	11.94	74.7	Pale orange	No
14:00	5	200	22.51	0.00	5.66	0.289	12.1	0.48	11.73	71.2	Pale orange	No
14:15	15	200	22.51	0.00	5.63	0.289	12.1	0.3	11.8	69.9	Pale orange	No
14:21	6	200	22.51	0.00	5.62	0.289	8.8	0.3	11.93	69.9	Pale orange	No
14:25	4	200	22.51	0.00	5.65	0.291	9.99	0.29	11.78	69.1	Pale orange	No
14:30	5	200	22.51	0.00	5.63	0.291	8.8	0.28	11.9	68.1	Pale orange	No
14:36	6	200	22.51	0.00	5.58	0.291	8.91	0.29	11.74	69.4	Pale orange	No
14:41	5	200	22.51	0.00	5.55	0.29	7.24	0.28	11.98	70.3	Pale orange	No
14:45	4	200	22.51	0.00	5.54	0.289	8.9	0.28	11.86	71.4	Pale orange	No
14:49	4	200	22.51	0.00	5.52	0.288	8.01	0.28	11.94	71.7	Pale orange	No
14:55	6	200	22.51	0.00	5.52	0.289	8.55	0.27	12.08	70.6	Pale orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: I didn't realize the duplicate numbers were preassigned and did the duplicate on SHL-20 as DUP01. The duplicate for this well is DUP02

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-11	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Overcast 59
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	18.4	Total Depth (ft-bmp)	29.8	Water Column(ft)	11
				Gallons in Well	1.85
MP Elevation		Pump Intake (ft-bmp)	24	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:25	Volumes Purged		Sample ID	Shl-11-Spr-20
Purge Start	10:53	Gallons Purged		Sampled by	Diane Champagne
Purge End	11:35			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:56		200	18.4	0.00	6.32	0.637	27.3	1.07	12.21	43.3	Pale yellow	
11:00	4	200	18.4	0.00	6.26	0.637	15.4	0.5	12.16	36.8	Pale yellow	
11:05	5	200	18.4	0.00	6.28	0.636	10.3	0.39	12.07	27.1	Pale yellow	
11:11	6	200	18.4	0.00	6.27	0.635	13.4	0.35	11.96	19.2	Pale yellow	
11:15	4	200	18.4	0.00	6.29	0.636	13.8	0.33	11.99	14.1	Pale yellow	
11:20	5	200	18.4	0.00	6.3	0.637	14.1	0.32	12.01	9.3	Pale yellow	

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-20	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Overcast 59
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
				Well Casing Material	PVC
Static Water Level (ft-bmp)	17.15	Total Depth (ft-bmp)	50.1	Water Column(ft)	33
				Gallons in Well	21.42
MP Elevation		Pump Intake (ft-bmp)	46	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	10:20	Volumes Purged		Sample ID	SHL-20-SPR20
Purge Start	09:35	Gallons Purged		Replicate/ Code No.	She-dup01-spr20
Purge End	10:37				

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:40		200	20.21	0.00	6.57	0.51	20.8	1.07	11.58	28.7	No	No
09:49	9	200	20.21	0.00	6.5	0.509	18.8	0.65	11.45	24.6	No	No
09:51	2	200	20.21	0.00	6.51	0.51	21.3	0.58	11.57	20.6	No	No
09:57	6	200	20.21	0.00	6.5	0.511	18.2	0.47	11.47	15.7	No	No
10:01	4	200	20.21	0.00	6.52	0.511	17.7	0.44	11.49	12.2	No	No
10:05	4	200	20.21	0.00	6.54	0.511	18.2	0.42	11.53	8.1	No	No
10:14	9	200	20.21	0.00	6.54	0.511	17.6	0.4	11.73	3.4	No	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-07-05X	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	16C, Sunny, Light Breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	3.77	Total Depth (ft-bmp)	64.75	Water Column(ft)	61
MP Elevation		Pump Intake (ft-bmp)	59.75	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	16:20	Volumes Purged		Sample ID	SHM-07-05X-SPR20
Purge Start	15:25	Gallons Purged		Sampled by	Desmond Bedard
Purge End	16:43			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:25		200	3.77	0.00	6.76	0.183	137	2.02	12.44	258	Light brown	No
15:30	5	200	4.85	0.00	5.71	0.181	127	1.65	12.09	279.9	Light brown	No
15:35	5	180	7.63	0.00	5.73	0.182	139	1.23	12.72	247.8	Light brown	No
15:40	5	150	8.23	0.00	6.2	0.181	121	1.19	12.11	229.6	Light brown	No
15:45	5	100	9.65	0.00	5.79	0.181	107	1.04	12.27	246.1	Light brown	No
15:50	5	100	10.82	0.00	6.09	0.184	109	1.02	12.73	208.3	Light brown	No
15:54	4	100	11.04	0.00	6.48	0.185	106	0.98	12.65	207.4	Light brown	No
15:59	5	100	12.02	0.00	6.68	0.188	129	1	12.46	195.3	Light brown	No
16:02	3	100	12.66	0.00	6.59	0.184	108	0.99	12.66	198.9	Light brown	No
16:06	4	100	13.63	0.00	6.24	0.183	111	0.96	12.54	220	Light brown	No
16:10	4	100	14.09	0.00	6.19	0.186	109	0.94	12.73	222.8	Light brown	No
16:15	5	100	13.75	0.00	6.27	0.188	119	0.92	12.84	216.1	Light brown	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Information

Well Location:	_____	Well Locked at Arrival:	no
Condition of Well:	Good	Well Locked at Departure:	no
Well Completion:	Flush mount	Key Number To Well:	NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EW-01	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	Well Casing Material NA
Static Water Level (ft-bmp)	26.62	Total Depth (ft-bmp)	63.15	Water Column(ft) 37	Gallons in Well
MP Elevation	Pump Intake (ft-bmp)		Purge Method Grab	Sample Method	Low-Flow
Sample Time	14:00	Volumes Purged	Sample ID EW-01-SPR20	Sampled by	Gabriel O'Connor
Purge Start	#Error	Gallons Purged	Replicate/ Code No.		
Purge End	#Error				

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:00		100	14.1	0.00	6.62	569	40	9.26	11.79	-43.3	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival:
Condition of Well:	Well Locked at Departure:
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EW-04	Date	5/18/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	Well Casing Material NA
Static Water Level (ft-bmp)	44.38	Total Depth (ft-bmp)	102	Water Column(ft) 58	Gallons in Well
MP Elevation		Pump Intake (ft-bmp)		Purge Method Grab	Sample Method Low-Flow
Sample Time	13:40	Volumes Purged		Sample ID EW-04-SPR20	Sampled by Gabriel O'Connor
Purge Start	#Error	Gallons Purged		Replicate/ Code No.	
Purge End	#Error				

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:49		100	14.1	0.00	7.73	317	39.3	9.54	11.92	-65.3	Light brown	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival:
Condition of Well:	Well Locked at Departure:
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-1A	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.32	Total Depth (ft-bmp)	27.6	Water Column(ft)	17
				Gallons in Well	0.7
MP Elevation		Pump Intake (ft-bmp)	22.5	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	13:30	Volumes Purged		Sample ID	EPA-PZ-2012-1A-SPR20
Purge Start	12:35	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	01:42			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:35		100	10.49	0.13	6.25	0.127	40.5	4.8	11.01	63.8	Clear	No
12:40	5	100	10.5	0.26	6	0.123	40.1	4.26	10.6	78	Clear	No
12:45	5	100	10.5	0.40	5.96	0.127	23.6	3.94	10.49	90.7	Clear	No
12:50	5	100	10.51	0.53	5.98	0.129	10.1	3.91	10.28	93.4	Clear	No
12:55	5	100	10.51	0.66	6.01	0.109	6.24	3.9	10.1	94.9	Clear	No
13:00	5	100	10.51	0.79	6.01	124	6.33	3.9	9.7	95.1	Clear	No
13:05	5	100	10.51	0.92	6.02	0.125	6.81	3.8	9.8	95.2	Clear	No
13:10	5	100	10.51	1.06	6.03	0.124	14.6	3.77	9.82	97	Clear	No
13:15	5	100	10.51	1.19	6.05	0.122	4.22	3.8	9.49	97.6	Clear	No
13:19	4	100	10.51	1.32	6.06	0.123	3.47	3.8	9.38	98.4	Clear	No
13:24	5	100	10.51	1.32	6.06	0.122	3.04	4.1	9.42	91.5	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHP

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Condition of Well: Good

Well Locked at Departure: yes

Well Completion: Stick-up

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-1B	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.14	Total Depth (ft-bmp)	77.24	Water Column(ft)	67
				Gallons in Well	2.73
MP Elevation		Pump Intake (ft-bmp)	72	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:35	Volumes Purged		Sample ID	EPA-PZ-2012-1B-SPR20
Purge Start	13:53	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	15:46			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:53		100	10.21	0.13	6.28	0.411	31.4	2.87	11.46	-15	Clear	No
13:57	4	100	10.15	0.26	6.35	0.466	42	2.28	11.52	-25.5	Clear	No
14:02	5	100	10.15	0.00	6.35	0.466	50.5	2.22	11.56	-31.7	Clear	No
14:07	5	100	10.15	0.53	6.35	0.469	59.7	2.33	11.34	-35	Clear	No
14:12	5	100	10.15	0.00	6.34	0.468	58.6	2.25	11.26	-36.7	Clear	No
14:17	5	100	10.15	0.79	6.31	0.488	61.3	2.3	11.41	-49.6	Clear	No
14:20	3	100	10.15	0.92	6.32	0.492	48.6	2.29	11.59	-52.3	Clear	No
14:25	5	100	10.15	0.00	6.33	0.49	39.8	2.28	11.28	-53	Clear	No
14:30	5	100	10.15	0.00	6.39	0.488	29.3	2.3	11.14	-53.6	Clear	No
14:35	5	100	10.15	0.00	6.42	0.493	21.7	2.24	11.19	-54.1	Clear	No
14:40	5	100	10.15	0.00	6.41	0.493	14	2.27	11.26	-54.4	Clear	No
14:45	5	100	10.15	0.00	6.37	0.494	12.9	2.32	11.27	-54.2	Clear	No
14:50	5	100	10.15	0.00	6.32	0.493	10.3	2.32	11.68	-54.2	Clear	No
14:55	5	100	10.15	0.00	6.46	0.495	8.7	2.46	11.84	55.3	Clear	No
14:00	1385	100	10.15	0.00	6.33	0.496	6.3	2.33	11.85	-54.6	Clear	No
15:05	65	100	10.15	0.00	6.32	0.494	4.11	2.35	11.9	-53.7	Clear	No
15:10	5	100	10.15	0.00	6.28	0.492	4.94	2.31	11.72	-52.9	Clear	No
15:15	5	100	10.15	0.00	6.31	0.496	3.08	2.3	11.8	-52.5	Clear	No

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival:
Condition of Well:	Well Locked at Departure:
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-2A	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	18c, Sunny, Medium Breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	9.93	Total Depth (ft-bmp)	27.9	Water Column(ft)	18
MP Elevation		Pump Intake (ft-bmp)	22.9	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:25	Volumes Purged		Sample ID	EPA-PZ-2012-2A-SPR20
Purge Start	14:30	Gallons Purged		Sampled by	Desmond Bedard
Purge End	#Error			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:30		130	9.93	0.00	8.65	0.054	1.56	7.21	11.2	154.8	None; clear	None
14:35	725	120	9.99	0.00	5.05	0.043	1.99	4.11	11.01	371.8	None; clear	None
14:40	5	120	9.99	0.00	5.07	0.044	2.14	3.74	11.99	348.5	None; clear	None
14:45	5	120	9.99	0.00	4.85	0.043	1.99	3.63	11.92	382.4	None; clear	None
14:50	5	120	9.99	0.00	5.25	0.042	1.16	3.68	12.02	361.8	None; clear	None
14:55	5	120	9.99	0.00	5.34	0.042	0.5	3.56	12.08	357	None; clear	None
15:00	5	120	9.99	0.00	4.25	0.041	0.24	3.64	12.09	415.7	None; clear	None
15:05	5	120	9.99	0.00	4.26	0.041	0.26	3.57	12	417.9	None; clear	None
15:10	5	120	9.99	0.00	4.41	0.04	0.22	3.64	11.94	418.7	None; clear	None
15:15	5	120	9.99	0.00	4.45	0.04	0.25	3.61	12.07	414.2	None; clear	None
15:20	5	120	9.99	0.00	4.47	0.04	0.22	3.61	12.05	409.9	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used tubing found in well for low flow sampling

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: In woods North East East of EW

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Condition of Well: treatment building
Good
Well Completion: Stick-up

Well Locked at Departure: yes
Key Number To Well: EPA Key

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-4A	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	13.89	Total Depth (ft-bmp)	27.74	Water Column(ft)	14
				Gallons in Well	0.56
MP Elevation		Pump Intake (ft-bmp)	22	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	10:15	Volumes Purged		Sample ID	EPA-PZ-2012-4A-SPR20
Purge Start	09:34	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	10:32			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:38		100	14.03	0.13	6.59	0.24	13.3	6.05	13.55	-11.3	Clear	No
09:43	5	100	14.03	0.26	6.44	0.272	4.8	4.19	13.06	-24.3	Clear	No
09:47	4	100	14.03	0.40	6.44	0.276	1.35	4.01	13.17	-32.8	Clear	No
09:50	3	100	14.03	0.53	6.44	0.282	1.83	3.95	13.25	-37.9	Clear	No
09:55	5	100	14.03	0.66	6.45	0.281	0.02	3.9	13.15	-44.1	Clear	No
10:00	5	100	14.03	0.79	6.44	0.282	0.02	3.9	13.12	-48.3	Clear	No
10:05	5	100	14.03	0.92	6.45	0.279	0.02	3.84	13.09	-52.6	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHP	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-4B	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	13.91	Total Depth (ft-bmp)	76.73	Water Column(ft)	63
				Gallons in Well	2.55
MP Elevation		Pump Intake (ft-bmp)	71	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:30	Volumes Purged		Sample ID	EPA-PZ-2012-04B-SPR20
Purge Start	10:52	Gallons Purged		Replicate/Code No.	SHL-DUP05-SPR20
Purge End	11:50				
				Sampled by	Gabriel O'Connor

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:57		100	13.75	0.13	6.64	0.49	41.8	6.87	16.75	-70.3	Clear	No
11:02	5	100	13.75	0.26	6.7	0.513	8.39	4.26	15.61	-96.8	Clear	No
11:05	3	100	13.93	0.53	6.69	0.507	0.61	4.06	15.31	-99.4	Clear	No
11:10	5	100	13.93	0.53	6.7	0.501	0.02	4.11	14.66	-101.5	Clear	No
11:15	5	100	13.93	0.79	6.7	0.502	0.02	3.98	14.61	-102.8	Clear	No
11:20	5	100	13.93	0.92	6.69	0.505	0.02	3.86	14.6	-104.2	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-08	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 74
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	23.95	Total Depth (ft-bmp)	32	Water Column(ft)	8
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	10:05	Volumes Purged		Sample ID	PZ-12-08 -SPR20
Purge Start	08:36	Gallons Purged		Sampled by	Diane Champagne
Purge End	10:13			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:36		200	23.97	0.00	6.36	0.155	421	0.53	9.91	93.6	Orange	No
08:41	5	200	23.97	0.00	6.29	0.155	165	0.48	10.04	93	Orange	No
08:45	4	200	23.97	0.00	6.27	0.155	155	0.52	9.96	93.1	Orange	No
08:50	5	200	23.97	0.00	6.22	0.154	141	0.52	10.03	93.3	Orange	No
09:02	12	200	23.97	0.00	6.16	0.156	74.6	0.55	10.12	93.8	Orange	No
09:07	5	200	23.97	0.00	6.15	0.149	64.3	0.89	10.36	92.5	Orange	No
09:10	3	200	23.97	0.00	6.15	0.147	55.5	1.29	10.38	93.1	Orange	No
09:18	8	200	23.97	0.00	6.14	0.136	42.1	2.42	10.4	93.4	Orange	No
09:24	6	200	23.97	0.00	6.11	0.13	40.1	3.87	10.47	96.4	Orange	No
09:30	6	200	23.97	0.00	6.1	0.127	24.8	3.88	10.54	97.7	Orange	No
09:36	6	200	23.97	0.00	6.13	0.139	20.1	5.12	10.53	96.3	Orange	No
09:40	4	200	23.97	0.00	6.09	0.129	20.6	4.85	10.69	98	Orange	No
09:45	5	200	23.97	0.00	6.06	0.123	18.9	5	10.72	99.1	Orange	No
09:50	5	200	23.97	0.00	6.06	0.127	19.4	5.1	10.63	99.2	Orange	No
09:55	5	200	23.97	0.00	6.04	0.128	19.6	5.11	10.64	101.1	Orange	No
10:00	5	200	23.97	0.00	6.06	0.127	18.9	4.9	10.71	99.7	Orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Barrier wall	Well Locked at Arrival:	no
Condition of Well:	Good	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	2006

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-10	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 63
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	30.36	Total Depth (ft-bmp)	38.8	Water Column(ft)	8
				Gallons in Well	1.37
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	14:05	Volumes Purged		Sample ID	SHL-10-spr20
Purge Start	12:39	Gallons Purged		Sampled by	Diane Champagne
Purge End	14:25			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:40		200	30.47	0.00	6.29	0.031	24.1	10.68	13.62	166.7	No	
12:45	5	200	30.47	0.00	5.67	0.017	27.3	10.39	13.65	187.8	No	
12:50	5	200	30.47	0.00	5.6	0.018	14.2	10.79	13.79	182.8	No	
12:55	5	200	30.47	0.00	5.64	0.02	13.9	10.28	13.25	171.2	No	
12:59	4	200	30.47	0.00	5.53	0.02	13.1	10.74	13.89	165	No	
13:04	5	200	30.47	0.00	5.81	0.021	13	9.59	13.09	151	No	
13:10	6	200	30.47	0.00	5.94	0.021	8.16	10.6	13.8	142.1	No	
13:15	5	200	30.47	0.00	5.89	0.021	7.48	10.28	13.96	145.2	No	
13:19	4	200	30.47	0.00	5.78	0.021	3.3	9.79	13.15	150.5	No	
13:25	6	200	30.47	0.00	5.65	0.022	3.56	9.85	13.58	160.2	No	
13:30	5	200	30.47	0.00	5.77	0.022	3.41	9.78	13.9	155.4	No	
13:35	5	200	30.47	0.00	5.77	0.022	2.85	9.89	13.51	157.5	No	
13:40	5	200	30.47	0.00	5.64	0.022	2.81	9.63	13.47	166.1	No	
13:45	5	200	30.47	0.00	5.54	0.022	3.65	9.78	13.71	167.4	No	
13:50	5	200	30.47	0.00	5.82	0.022	3.33	9.34	13.68	157.7	No	
13:55	5	200	30.47	0.00	5.76	0.022	3.65	10.22	13.65	161.8	No	
14:00	5	200	30.47	0.00	5.79	0.022	3.5	9.55	13.48	163.6	No	

Constituent Sampled	Container	Number	Preservative
Comments:			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-19	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 68
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
				Well Casing Material	PVC
Static Water Level (ft-bmp)	22.3	Total Depth (ft-bmp)	30	Water Column(ft)	8
MP Elevation		Pump Intake (ft-bmp)	27.5	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	12:00	Volumes Purged		Sample ID	SHL-19
Purge Start	10:39	Gallons Purged		Sampled by	Diane Champagne
Purge End	12:13			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:40		200	23.2	0.00	6.49	0.059	61.2	10.04	12.64	104.9	Orange	No
10:45	5	200	23.21	0.00	6.41	0.058	55.7	10.11	12.62	106.08	Orange	No
10:50	5	200	23.3	0.00	6.38	0.057	71.3	10.08	12.73	107.05	Orange	No
10:55	5	200	23.2	0.00	6.34	0.058	67.3	9.96	12.83	107.1	Orange	No
11:00	5	200	23.21	0.00	6.46	0.057	37.3	10.08	12.53	104.1	Orange	No
11:06	6	200	23.21	0.00	6.42	0.057	57.3	10.88	12.67	107.7	Orange	No
11:11	5	200	23.2	0.00	6.43	0.057	44.4	10.7	0.057	107.9	Orange	No
11:15	4	200	23.2	0.00	6.46	0.057	53.7	10.64	13.38	108.3	Orange	No
11:20	5	200	23.21	0.00	6.48	0.057	53.7	10.59	13.41	107.6	Orange	No
11:25	5	200	23.21	0.00	6.49	0.057	23.1	10.55	13.85	108.07	Orange	No
11:30	5	200	23.21	0.00	6.48	0.057	21.9	10.8	13.32	112.3	Orange	No
11:36	6	200	23.21	0.00	6.41	0.057	19.4	10.54	13.47	113.8	Orange	No
11:40	4	200	23.21	0.00	6.5	0.057	18.5	10.95	13.32	109.1	Orange	No
11:45	5	200	23.21	0.00	6.47	0.057	8.43	10.95	13.32	109.8	Orange	No
11:50	5	200	23.21	0.00	6.42	0.057	8.73	10.62	13.41	114.5	Orange	No
11:55	5	200	23.21	0.00	6.45	0.056	7.99	10.3	13.25	111.6	Orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3537

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-05-40X	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	13C, Sunny, Medium Breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	13.7	Total Depth (ft-bmp)	33.55	Water Column(ft)	20
MP Elevation		Pump Intake (ft-bmp)	28.5	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:15	Volumes Purged		Sample ID	SHM-05-40X-SPR20
Purge Start	10:05	Gallons Purged			
Purge End	#Error			Replicate/Code No.	SHL-DUP06-SPR20
Sampled by	Desmond Bedard				

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:05		180	13.7	0.00	6.81	0.368	122	3.77	12.79	100.3	None; clear	None
10:10	5	150	13.83	0.00	5.19	0.337	112	1.13	13.82	126.6	None; clear	None
10:15	5	120	13.81	0.00	6.14	0.344	50.9	1.11	13.55	76.7	None; clear	None
10:20	5	120	13.8	0.00	6.31	0.348	43.2	0.91	13.65	60.5	None; clear	None
10:25	5	120	13.8	0.00	6.38	0.36	30.6	0.73	13.59	55.9	None; clear	None
10:30	5	120	13.8	0.00	6.38	0.354	50.4	0.71	13.72	53.1	None; clear	None
10:35	5	120	13.8	0.00	6.43	0.353	29.4	0.64	13.76	47.1	None; clear	None
10:40	5	120	13.8	0.00	6.54	0.35	21.8	0.63	13.88	40.9	None; clear	None
10:45	5	120	13.8	0.00	6.71	0.348	26.6	0.41	13.51	41.5	None; clear	None
10:50	5	120	13.8	0.00	5.95	0.342	11.8	0.29	13.59	78.2	None; clear	None
10:55	5	120	13.8	0.00	6.18	0.341	12.1	0.28	13.48	46.5	None; clear	None
11:00	5	120	13.8	0.00	6.44	0.338	11.3	0.27	13.55	45.4	None; clear	None
11:05	5	120	13.8	0.00	6.37	0.338	11.3	0.25	13.56	46.9	None; clear	None
11:10	5	120	13.8	0.00	6.43	0.333	12	0.26	13.49	44.4	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: One bolt on cover flush with asphalt is missing; used tubing found in well for sampling

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: <u>Good; except for missing bolt as described in notes</u>	Well Locked at Departure: _____
Well Completion: <u>Flush mount</u>	Key Number To Well: <u>NA</u>

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-11-02	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 68
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
				Well Casing Material	Open
Static Water Level (ft-bmp)	20.75	Total Depth (ft-bmp)	66	Water Column(ft)	45
MP Elevation		Pump Intake (ft-bmp)	60	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:50	Volumes Purged		Sample ID	SHM-11-02-Spr20
Purge Start	#Error	Gallons Purged		Sampled by	Diane Champagne
Purge End	16:09			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:35		300	22.65	0.00	6.54	0.325	22.1	0.88	13.24	-34.7	None	No
14:40	5	300	22.71	0.00	6.74	0.31	23.4	0.6	14.07	-76.9	None	No
14:46	6	300	22.8	0.00	7.03	0.312	24.7	0.57	14.11	-96.5	None	No
14:50	4	160	22.9	0.00	7.04	0.319	20.1	0.49	13.95	-107.2	None	No
14:55	5	160	23	0.00	7.03	0.328	22.2	0.51	14.23	-123.8	None	No
15:00	5	160	23.45	0.00	7.1	0.339	23.6	0.42	13.92	-132.2	None	No
15:05	5	300	23.72	0.00	7.08	0.351	20.1	0.39	14.09	-132	None	No
15:10	5	300	23.7	0.00	7.11	0.357	20.8	0.37	14.07	-134.4	None	No
15:16	6	300	23.89	0.00	7.15	0.376	15.9	0.37	14.15	-140.8	None	No
15:20	4	300	23.9	0.00	7.11	0.4	9.96	0.36	14.16	-140.1	None	No
15:25	5	300	24.15	0.00	7.08	0.43	9.71	0.36	14.11	-141.1	None	No
15:30	5	300	24.4	0.00	7.04	0.473	8.96	0.38	14.22	-139	None	No
15:35	5	300	24.62	0.00	7.01	0.516	8.83	0.4	14.24	-135	None	No
15:40	5	300	24.99	0.00	6.99	0.518	8.14	0.39	14.2	-132.9	None	No
15:45	5	300	24.99	0.00	6.96	0.526	8.29	0.39	14.11	-130.6	None	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Barrier wall	Well Locked at Arrival:	no
Condition of Well:	Good	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	2006

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-06	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	10C, Sunny, Light Breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	17.13	Total Depth (ft-bmp)	46.2	Water Column(ft)	29
				Gallons in Well	4.72
MP Elevation		Pump Intake (ft-bmp)	40	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	08:55	Volumes Purged		Sample ID	SHM-13-06-SPR20
Purge Start	08:10	Gallons Purged		Sampled by	Desmond Bedard
Purge End	08:55			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:10		160	17.13	0.00	7.35	0.364	24.2	10.7	13.21	130.1	None; clear	None
08:15	5	160	17.16	0.00	7.07	0.336	26.1	2.9	11.53	73.8	None; clear	None
08:20	5	120	17.15	0.00	6.47	0.338	60.5	0.84	11.85	57.9	None; clear	None
08:25	5	120	17.15	0.00	6.64	367	39.2	0.82	11.03	32.9	None; clear	None
08:30	5	120	17.15	0.00	6.67	0.374	35.9	0.75	11.22	28	None; clear	None
08:35	5	120	17.15	0.00	6.69	0.391	32	0.62	11.45	24.7	None; clear	None
08:40	5	120	17.15	0.00	6.66	0.397	29.8	0.56	11.52	25.2	None; clear	None
08:45	5	120	17.15	0.00	6.69	0.401	28.8	0.53	11.48	23.9	None; clear	None
08:50	5	120	17.15	0.00	6.7	0.402	29.2	0.53	11.51	22.3	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used tubing found in well for sampling

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Off of West Main Street (North)	Well Locked at Arrival: no
Condition of Well: Good	Well Locked at Departure:
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-96-5B	Date	5/19/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	18c, Sunny, Medium Breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	5.86	Total Depth (ft-bmp)	89.75	Water Column(ft)	84
MP Elevation		Pump Intake (ft-bmp)	28	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	13:40	Volumes Purged		Sample ID	SHM-96-5B-SPR20
Purge Start	12:45	Gallons Purged		Sampled by	Desmond Bedard
Purge End	13:40			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:45		150	5.86	0.00	7.29	0.489	31.2	8.66	12.27	164.1	None; clear	None
12:50	5	150	5.99	0.00	4.56	0.447	36.3	2.76	11.24	218.7	None; clear	None
12:55	5	150	6.01	0.00	4.58	0.453	29.9	1.43	11.24	193.7	None; clear	None
13:00	5	150	6.01	0.00	5.15	0.456	32	0.79	11.28	158.7	None; clear	None
13:05	5	120	6.01	0.00	5.33	0.463	39.3	0.75	11.15	145.9	None; clear	None
13:10	5	120	5.97	0.00	6.36	0.471	28.4	0.62	11.51	92.2	None; clear	None
13:15	5	120	5.97	0.00	6.37	0.474	28.9	0.56	11.46	91	None; clear	None
13:20	5	120	5.97	0.00	6.42	0.479	21.6	0.52	11.73	87.5	None; clear	None
13:25	5	120	5.97	0.00	6.44	0.481	20.9	0.5	11.27	87.4	None; clear	None
13:30	5	120	5.97	0.00	6.43	0.484	21.7	0.5	11.23	86.2	None; clear	None
13:35	5	120	5.97	0.00	6.47	0.491	21.4	0.5	11.33	82.6	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used tubing found in well for sampling

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North of SHL EW building in woods

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Condition of Well: Good

Well Locked at Departure: yes

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-2B		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.04	Total Depth (ft-bmp)	83.35	Water Column(ft)	73	Gallons in Well	2.98
MP Elevation		Pump Intake (ft-bmp)	78	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:05	Volumes Purged		Sample ID	EPA-PZ-2012-2B-SPR20	Sampled by	Gabriel O'Connor
Purge Start	08:00	Gallons Purged					
Purge End	09:30			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:00		100	10.15	0.13	7.97	0.224	36.4	9.34	10.03	109.2	Clear	No
08:05	5	100	10.15	0.26	6.54	0.278	8.33	4.87	8.91	109.4	Clear	No
08:10	5	100	10.15	0.40	6.36	0.279	11.9	4.44	9.06	114.3	Clear	No
08:15	5	100	10.15	0.53	6.29	0.28	36.8	3.9	9.16	119	Clear	No
08:20	5	100	10.15	0.66	6.28	0.28	54.7	4.17	9.25	118.9	Clear	No
08:25	5	100	10.15	0.79	6.28	0.294	81.2	3.94	9.35	50.1	Clear	No
08:30	5	100	10.15	0.00	6.28	0.294	56.4	3.93	9.37	48.2	Clear	No
08:35	5	100	10.15	0.92	6.28	0.296	46.6	3.9	9.46	46.1	Clear	No
08:39	4	100	10.15	1.06	6.28	0.295	42.7	3.84	9.56	46.5	Clear	No
08:45	6	100	10.15	1.19	6.27	0.292	39.8	3.81	9.51	47.3	Clear	No
08:50	5	100	10.15	1.32	6.27	0.296	35.6	3.7	9.59	45	Clear	No
08:53	3	100	10.15	0.00	6.27	0.294	22.6	3.74	9.54	45.5	Clear	No
08:57	4	100	10.15	0.00	6.26	0.293	21.2	3.72	9.55	46.1	Clear	No
09:01	4	100	10.15	0.00	6.28	0.292	20.9	3.81	9.58	46.8	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Amber bottle had H2SO4 on outside

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	_____	Well Locked at Arrival: yes	_____
Condition of Well:	Good	Well Locked at Departure: yes	_____
Well Completion:	Stick-up	Key Number To Well: NA	_____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-4	Date	5/20/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 68
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.55	Total Depth (ft-bmp)	14.5	Water Column(ft)	4
MP Elevation		Pump Intake (ft-bmp)	12	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	09:40	Volumes Purged		Sample ID	SHL-4-SPR20
Purge Start	08:41	Gallons Purged		Sampled by	Diane Champagne
Purge End	09:51			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:42		240	10.56	0.00	7.4	0.251	667	0.88	10.37	34.2	Orange	No
08:45	3	240	10.57	0.00	7.17	0.252	681	0.78	10.51	26.5	Orange	No
08:50	5	240	10.58	0.00	7.05	0.253	214	0.66	10.66	23.9	Orange	No
08:55	5	240	10.58	0.00	6.92	0.256	105	0.58	10.49	22.2	Orange	No
09:01	6	240	10.58	0.00	6.86	0.259	81.3	0.54	10.95	19.7	Orange	No
09:06	5	240	10.58	0.00	6.8	0.259	84.3	0.51	10.54	21.3	Orange	No
09:10	4	240	10.58	0.00	6.7	0.259	39.5	0.5	10.61	23.6	Orange	No
09:15	5	240	10.58	0.00	6.69	0.26	26.8	0.49	10.92	21	Orange	No
09:20	5	240	10.58	0.00	6.67	0.261	25.9	0.46	10.61	23.4	Orange	No
09:25	5	240	10.58	0.00	6.63	0.263	22.2	0.46	10.96	20.5	Orange	No
09:30	5	240	10.58	0.00	6.65	0.262	20.9	0.45	11.03	18.5	Orange	No
09:35	5	240	10.58	0.00	6.58	0.262	21	0.46	11.02	18.6	Orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well:	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-11-06	Date	5/20/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 68
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	19.02	Total Depth (ft-bmp)	35.6	Water Column(ft)	17
				Gallons in Well	2.69
MP Elevation		Pump Intake (ft-bmp)	33	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:30	Volumes Purged		Sample ID	SHM-11-6-SPR20
Purge Start	#Error	Gallons Purged		Replicate/ Code No.	Shm-dup 03-spr20
Purge End	11:43				

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:11		200	10.58	0.00	6.3	0.683	116	1.04	11.33	60.5	No	No
10:21	10	200	19.12	0.00	5.74	0.649	106	0.85	11.09	50	No	No
10:25	4	200	19.12	0.00	5.62	0.652	36.8	0.73	11.06	47.9	No	No
10:31	6	200	19.12	0.00	5.45	0.654	34.1	0.62	11.12	48.3	No	No
10:35	4	200	19.14	0.00	5.41	0.655	21.4	0.54	11.24	46.9	No	No
10:42	7	200	19.14	0.00	5.2	0.654	9.94	0.5	11.37	49.8	No	No
10:46	4	200	19.14	0.00	5.15	0.656	8.81	0.48	11.22	52.9	No	No
10:51	5	200	19.14	0.00	5.15	0.656	7.74	0.46	11.12	51.6	No	No
10:55	4	200	19.14	0.00	5.16	0.658	8.46	0.44	11.2	50.6	No	No
11:02	7	200	19.14	0.00	5.28	0.656	8.17	0.42	11.29	44.4	No	No
11:05	3	200	19.18	0.00	5.27	0.655	8.11	0.41	11.18	43.6	No	No
11:10	5	200	19.18	0.00	5.25	0.657	2.99	0.41	11.22	40.6	No	No
11:15	5	200	19.18	0.00	5.1	0.656	2.88	0.41	11.35	42.5	No	No
11:20	5	200	19.18	0.00	5.04	0.656	3.03	0.41	11.21	44.5	No	No
11:25	5	200	19.18	0.00	5.08	0.658	3.6	0.42	11.32	44.7	No	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-04	Date	5/20/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	18.64	Total Depth (ft-bmp)	29.81	Water Column(ft)	11
				Gallons in Well	1.82
MP Elevation		Pump Intake (ft-bmp)	24	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:35	Volumes Purged		Sample ID	SHM-13-04-SPR20
Purge Start	14:03	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	15:01			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:10		100	18.65	0.13	6.85	0.772	49.1	7.74	17.91	104.9	Light brown	No
14:15	5	100	18.65	0.26	6.28	0.739	46.1	7.91	15.07	160	Light brown	No
14:20	5	100	18.65	0.40	6.13	0.744	39	7.05	14.56	176.6	Light brown	No
14:25	5	100	18.65	0.53	5.91	0.745	32.3	7.14	14.48	128.8	Light brown	No
14:29	4	100	18.65	0.00	5.82	0.742	28.2	7.15	14.27	111.1	Light brown	No
14:35	6	100	18.65	0.00	5.82	0.715	29.2	6.63	14.11	83.3	Light brown	No
14:40	5	100	18.65	0.00	5.92	0.704	22.3	6.54	14.07	68.4	Light brown	No
14:45	5	100	18.65	0.00	6.03	0.69	19.8	6.48	13.52	69.9	Light brown	No
14:50	5	100	18.65	0.00	6.08	0.692	19.7	6.4	13.66	58.6	Light brown	No
14:54	4	100	18.65	0.00	6.16	0.674	17.9	6.34	13.57	50.8	Light brown	No
14:59	5	100	18.65	0.00	6.23	0.668	15.6	6.34	13.33	49	Light brown	No
15:05	6	100	18.65	0.00	6.3	0.658	15.5	6.08	13.3	43.8	Light brown	No
15:10	5	100	18.65	0.00	6.4	0.65	14.4	6.16	13.24	39.4	Light brown	No
15:15	5	100	18.65	0.00	6.38	0.665	13.9	5.98	13.25	44	Light brown	No
15:19	4	100	18.65	0.00	6.39	0.641	11.4	5.86	13.32	45.9	Light brown	No
15:24	5	100	18.65	0.00	6.41	0.64	10.8	5.88	13.21	47.6	Light brown	No
15:29	5	100	18.65	0.00	6.42	0.64	10.4	6.05	13.38	49.1	Light brown	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Alkalinity				
Chloride/Sulfate				
Dissolved Organic Carbon				
Comments:				

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:		Well Locked at Arrival:	
Condition of Well:		Well Locked at Departure:	
Well Completion: NA		Key Number To Well: NA	

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-01-36X		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	Steel
Static Water Level (ft-bmp)	7.56	Total Depth (ft-bmp)	11	Water Column(ft)	3	Gallons in Well	0.14
MP Elevation		Pump Intake (ft-bmp)	8	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	13:00	Volumes Purged		Sample ID	SHP-01-36X-SPR20	Sampled by	Gabriel O'Connor
Purge Start	12:00	Gallons Purged					
Purge End	13:11			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:01		100	7.82	0.00	7.26	0.155	51.2	5.48	12.7	-21.1	Clear	No
12:06	5	100	7.82	0.26	6.78	0.246	17.1	3.35	12.29	5.6	Clear	No
12:11	5	100	7.82	0.40	6.51	0.264	4.39	3.09	12.27	17.3	Clear	No
12:15	4	100	7.82	0.53	6.44	0.271	0.43	3.03	11.9	21.4	Clear	No
12:20	5	100	7.82	0.00	6.43	0.27	0.24	3.2	11.86	22.5	Clear	No
12:25	5	100	7.82	0.00	6.41	0.272	0.02	3.18	11.82	23.4	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-01-37X		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	Steel
Static Water Level (ft-bmp)	6.36	Total Depth (ft-bmp)	11.21	Water Column(ft)	5	Gallons in Well	0.2
MP Elevation		Pump Intake (ft-bmp)	9	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	11:10	Volumes Purged		Sample ID	SHP-01-37X-SPR20	Sampled by	Gabriel O'Connor
Purge Start	10:34	Gallons Purged					
Purge End	11:20			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:35		100	6.44	0.13	7.17	0.385	52.9	5.29	13.4	-44.3	Clear	No
10:40	5	100	6.44	0.26	6.65	0.338	20	3.67	12.23	-29.2	Clear	No
10:45	5	100	6.45	0.40	6.64	0.321	5.38	3.58	11.94	-21.5	Clear	No
10:50	5	100	6.45	0.53	6.58	0.319	2.88	3.48	11.94	-19	Clear	No
10:55	5	100	6.45	0.53	6.61	0.319	1.24	3.79	12.04	-17.7	Clear	No
10:59	4	100	6.45	0.66	6.59	0.316	0.74	3.59	12.1	-17.3	Clear	No
11:02	3	100	6.45	0.00	6.58	0.315	0.73	3.77	12.19	-17	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHP	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-07A		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	Sun 71
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	15.2	Total Depth (ft-bmp)	33.6	Water Column(ft)	18	Gallons in Well	1.68
MP Elevation	Pump Intake (ft-bmp)		Purge Method		Low-Flow	Sample Method	Low-Flow
Sample Time	13:45	Volumes Purged	Sample ID		SHP-2016-7A-SPR20	Sampled by	Diane Champagne
Purge Start	12:23	Gallons Purged					
Purge End	13:58	Replicate/ Code No.					

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:27		200	15.2	0.00	6.72	0.103	33.4	1.02	13.23	-7.1	No	Yes
12:31	4	200	15.5	0.00	6.59	0.1	24.3	0.75	12.99	-10.6	No	Yes
12:35	4	200	15.74	0.00	6.53	0.097	7.83	0.57	12.98	-11.8	No	Yes
12:40	5	200	15.81	0.00	6.57	0.092	7.01	0.49	12.93	-16.2	No	Yes
12:48	8	200	15.89	0.00	6.34	0.088	5.67	0.43	13.36	-7.7	No	Yes
12:51	3	200	15.85	0.00	6.42	0.083	4.47	0.42	13.15	-11.6	No	Yes
12:57	6	200	15.81	0.00	6.29	0.078	4.57	0.4	13.5	-6.3	No	Yes
13:00	3	200	15.81	0.00	6.32	0.077	3.03	0.4	13.49	-2.9	No	Yes
13:05	5	200	15.81	0.00	6.27	0.075	2.55	0.4	13.68	0.5	No	Yes
13:10	5	200	15.81	0.00	6.3	0.075	2.01	0.4	13.69	0.2	No	Yes
13:15	5	200	15.81	0.00	6.12	0.073	4.79	0.39	13.23	8.2	No	Yes
13:20	5	200	15.81	0.00	6.2	0.072	5.11	0.39	13.49	6.2	No	Yes
13:25	5	200	15.81	0.00	6.15	0.07	2.72	0.4	12.87	8.9	No	Yes
13:30	5	200	15.81	0.00	6.13	0.069	2.46	0.43	13.27	12.6	No	Yes
13:35	5	200	15.81	0.00	6.04	0.069	2.68	0.39	13.58	14.7	No	Yes
13:41	6	200	15.81	0.00	6.12	0.068	2.22	0.39	13.67	10.1	No	Yes

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Dissolved Organic Carbon

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Landfill
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-2A		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts				Weather(°F)	12C, Sunny, No wind	
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	14.37	Total Depth (ft-bmp)	27.2	Water Column(ft)	13	Gallons in Well	0.52
MP Elevation		Pump Intake (ft-bmp)	22.2	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	10:40	Volumes Purged		Sample ID	SHP-2016-2A-SPR20	Sampled by	Desmond Bedard
Purge Start	09:50	Gallons Purged					
Purge End	10:40			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:50		100	14.37	0.00	6.6	0.171	9.09	7.11	13.67	119.6	None; clear	None
09:55	5	100	14.44	0.00	6.39	0.093	17.2	2.7	10.32	4.1	None; clear	None
10:00	5	100	14.45	0.00	7.22	0.097	5.62	2.29	11.19	-25.3	None; clear	None
10:05	5	100	14.45	0.00	7.92	0.098	2.73	2.31	11.52	-38.2	None; clear	None
10:10	5	100	14.45	0.00	8.3	0.098	2.13	2.2	11.54	-31.3	None; clear	None
10:15	5	100	14.45	0.00	8.52	0.097	2.94	2.28	11.26	-59.1	None; clear	None
10:20	5	100	14.45	0.00	8.36	0.096	3.42	2.24	11.19	-43.6	None; clear	None
10:25	5	100	14.45	0.00	8.41	0.096	2.66	2.24	11.19	-44.2	None; clear	None
10:30	5	100	14.45	0.00	8.48	0.096	2.59	2.23	11.25	-45.6	None; clear	None
10:35	5	100	14.45	0.00	8.47	0.096	2.6	2.28	11.24	-46.9	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used tubing found in well

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North west of EW treatment building
 Condition of Well: Good

Well Locked at Arrival: yes
 Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-2B		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts				Weather(°F)	8C, Sunny, No wind	
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	13.46	Total Depth (ft-bmp)	87.7	Water Column(ft)	74	Gallons in Well	3.02
MP Elevation		Pump Intake (ft-bmp)	42.5	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:20	Volumes Purged		Sample ID	SHP-2016-2B-SPR20	Sampled by	Desmond Bedard
Purge Start	08:15	Gallons Purged					
Purge End	09:20			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:15		150	13.46	0.00	6.52	0.211	7.1	2.12	8.18	13.6	None; clear	None
08:20	5	150	13.5	0.00	4.94	0.212	11.3	1.19	8.21	95.9	None; clear	None
08:25	5	110	13.5	0.00	4.97	0.216	2.12	0.91	8.33	94.2	None; clear	None
08:30	5	110	13.48	0.00	5.28	0.23	1.37	0.9	8.35	85.3	None; clear	None
08:35	5	110	13.48	0.00	5.63	0.242	2.2	0.73	8.41	68	None; clear	None
08:40	5	110	13.48	0.00	5.8	0.244	1.18	0.62	8.54	58.7	None; clear	None
08:45	5	110	13.48	0.00	6.02	0.244	1.21	0.59	8.54	47.2	None; clear	None
08:50	5	110	13.48	0.00	6.14	0.246	1.3	0.56	8.65	38.4	None; clear	None
08:55	5	110	13.48	0.00	6.38	0.246	1.09	0.59	8.58	32.1	None; clear	None
09:00	5	110	13.48	0.00	6.35	0.247	1.14	0.55	8.61	26.1	None; clear	None
09:05	5	110	13.48	0.00	6.34	0.247	1.18	0.46	8.59	25.4	None; clear	None
09:10	5	110	13.48	0.00	6.34	0.248	1.15	0.44	8.62	24.6	None; clear	None
09:15	5	110	13.48	0.00	6.38	0.248	1.15	0.46	8.62	19.5	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used fresh tubing; none found in well		

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods north west of EW treatment
building
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-3A		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts				Weather(°F)	20C, Sunny, Light breeze	
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.56	Total Depth (ft-bmp)	27.3	Water Column(ft)	17	Gallons in Well	0.68
MP Elevation		Pump Intake (ft-bmp)	22.3	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	15:25	Volumes Purged		Sample ID	SHP-2016-3A-SPR20	Sampled by	Desmond Bedard
Purge Start	14:20	Gallons Purged					
Purge End	15:25			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:20		170	10.56	0.00	7.02	0.111	7.31	5.7	10.91	86.5	Clear and colorless	None
14:25	5	150	11.45	0.00	4.33	0.092	9.18	0.54	10.34	193.4	Clear and colorless	None
14:30	5	120	11.4	0.00	6.08	0.096	12.39	0.59	9.99	89.4	Clear and colorless	None
14:35	5	120	11.37	0.00	5.34	0.093	0.95	0.54	9.76	128.7	Clear and colorless	None
14:40	5	120	11.37	0.00	5.78	0.092	3.03	0.6	9.77	102.9	Clear and colorless	None
14:45	5	120	11.37	0.00	5.9	0.09	1.09	0.62	9.71	99.6	Clear and colorless	None
14:50	5	120	11.37	0.00	5.93	0.09	0.84	0.64	9.81	98.2	Clear and colorless	None
14:55	5	120	11.37	0.00	6.48	0.089	1.98	0.71	10.06	70.6	Clear and colorless	None
15:00	5	120	11.39	0.00	6.33	0.088	1.91	0.8	10.09	83.2	Clear and colorless	None
15:05	5	120	11.39	0.00	6.29	0.087	1.03	0.93	10.05	86.6	Clear and colorless	None
15:10	5	120	11.39	0.00	6.16	0.086	0.98	1.03	10.01	96.8	Clear and colorless	None
15:15	5	120	11.39	0.00	6.15	0.086	0.95	1.11	10.09	97.3	Clear and colorless	None
15:20	5	120	11.39	0.00	6.16	0.085	1.09	1.13	10.13	94.4	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used tubing found in well		

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North west of EW treatment
building
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-3B		Date	5/20/2020	
Project Name/Location	Devens, Massachusetts				Weather(°F)	18C, Sunny, No wind	
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.66	Total Depth (ft-bmp)	87.4	Water Column(ft)	77	Gallons in Well	3.12
MP Elevation		Pump Intake (ft-bmp)	37.5	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	13:50	Volumes Purged		Sample ID	SHP-2016-3B-SPR20	Sampled by	Desmond Bedard
Purge Start	12:35	Gallons Purged					
Purge End	13:50			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:35		160	10.66	0.00	7.55	0.195	2.61	3.69	8.45	23.4	None; clear	None
12:40	5	120	10.71	0.00	3.69	0.187	7.36	0.84	8.63	211.2	None; clear	None
12:45	5	120	10.69	0.00	4.07	0.186	3.09	0.66	8.77	190.2	None; clear	None
12:50	5	120	10.68	0.00	4.78	0.186	2.88	0.66	8.65	149.9	None; clear	None
12:55	5	120	10.68	0.00	5.5	0.189	1.72	0.58	9.42	103.1	None; clear	None
13:00	5	120	10.68	0.00	5.97	0.189	2.57	0.47	9.89	84	None; clear	None
13:05	5	120	10.68	0.00	6.43	0.191	2.44	0.42	9.99	55.4	None; clear	None
13:10	5	120	10.68	0.00	6.42	0.193	2.48	0.38	10.12	56.8	None; clear	None
13:15	5	120	10.68	0.00	6.33	0.189	2.26	0.36	9.95	62.4	None; clear	None
13:20	5	120	10.68	0.00	6.21	0.192	2.27	0.35	9.88	69.5	None; clear	None
13:25	5	120	10.68	0.00	6.41	0.195	2.2	0.32	10.11	55.8	None; clear	None
13:30	5	120	10.68	0.00	6.11	0.195	2.18	0.31	9.92	73.4	None; clear	None
13:35	5	120	10.68	0.00	6.29	0.201	2.19	0.31	9.89	62.1	None; clear	None
13:40	5	120	10.68	0.00	6.34	0.201	2.18	0.29	9.91	59.3	None; clear	None
13:45	5	120	10.68	0.00	6.36	0.202	2.22	0.29	10.02	55	None; clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Comments: Used new tubing; none found in well

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North west of EW treatment
building
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-3A	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	9.93	Total Depth (ft-bmp)	26.68	Water Column(ft)	17
MP Elevation		Pump Intake (ft-bmp)	21	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	08:40	Volumes Purged		Sample ID	EPA-PZ-2012-3A-SPR20
Purge Start	07:58	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	#Error			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
07:59		100	9.96	0.13	7.71	0.144	64.6	7.7	10.46	-26.4	Light brown	No
08:04	5	100	9.98	0.26	6.25	0.367	56.2	3.86	9.89	1.5	Light brown	No
08:07	3	100	9.96	0.00	6.2	0.258	35.9	3.63	9.98	0.9	Light brown	No
08:10	3	100	9.99	0.00	6.19	0.256	27.5	3.57	9.99	-0.7	Light brown	No
08:15	5	100	9.99	0.66	6.18	0.256	16.6	3.7	10.07	-2	Light brown	No
08:20	5	100	9.99	0.00	6.17	0.257	4.74	3.67	10.17	-3.2	Light brown	No
08:25	5	100	9.99	0.00	6.17	0.258	0.34	3.63	10.27	-5.4	Light brown	No
08:30	5	100	9.99	0.00	6.16	0.26	0.02	3.56	10.25	-8	Light brown	No
08:35	5	100	9.99	0.00	6.14	0.258	0.02	3.5	10.31	-11	Light brown	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Missing plug		

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-3B	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	60, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	9.9	Total Depth (ft-bmp)	76.75	Water Column(ft)	67
				Gallons in Well	2.72
MP Elevation		Pump Intake (ft-bmp)	71	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	09:45	Volumes Purged		Sample ID	EPA-PZ-2012-3B-SPR20
Purge Start	09:07	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	10:18			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:08		100	9.98	0.13	6.54	0.556	40	5.92	11.74	-84.4	Clear	No
09:12	4	100	9.98	0.26	6.55	0.528	0.74	4.54	11.46	-90.4	Clear	No
09:15	3	100	9.98	0.00	6.56	0.528	0.02	3.85	11.39	-92.3	Clear	No
09:20	5	100	9.98	0.00	6.6	0.529	0.02	3.84	11.5	-94.1	Clear	No
09:25	5	100	9.98	0.00	6.62	0.528	0.02	3.81	11.33	-95.4	Clear	No
09:30	5	100	9.98	0.00	6.63	0.529	0.02	3.78	11.35	-96.5	Clear	No
09:35	5	100	9.98	0.00	6.63	0.528	0.02	3.74	11.54	-97.1	Clear	No
09:40	5	100	9.98	0.00	6.64	0.533	0.02	3.72	11.62	-97.8	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-05-41B	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 75
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.14	Total Depth (ft-bmp)	64	Water Column(ft)	54
				Gallons in Well	8.75
MP Elevation		Pump Intake (ft-bmp)	61	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:30	Volumes Purged		Sample ID	SHM5-41B-SPR20
Purge Start	#Error	Gallons Purged		Sampled by	Diane Champagne
Purge End	15:36			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:50		180	10.15	0.00	5.79	4.895	26.4	0.65	11.99	185.8	Pale orange	No
14:54	4	180	10.15	0.00	5.63	4.012	22.1	0.55	12.04	201	Pale orange	No
15:00	6	180	10.15	0.00	5.59	3.874	27.3	0.49	12.18	214.9	Pale orange	No
15:05	5	180	10.15	0.00	5.37	2.46	19.9	0.39	12.46	213.1	Pale orange	No
15:12	7	180	10.15	0.00	5.34	1.869	20.4	0.39	12.06	233.5	Pale orange	No
15:16	4	180	10.15	0.00	5.34	1.527	23.1	0.37	12.35	236.7	Pale orange	No
15:20	4	180	10.15	0.00	5.32	1.555	23.5	0.36	12.24	233.3	Pale orange	No
15:25	5	180	10.15	0.00	5.33	1.561	22	0.36	12.37	235.8	Pale orange	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Nearfields	Well Locked at Arrival: no
Condition of Well: Fair. Missing bolts	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-05-41C	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 75
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	10.69	Total Depth (ft-bmp)	93	Water Column(ft)	82
				Gallons in Well	13.37
MP Elevation		Pump Intake (ft-bmp)	90	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	14:20	Volumes Purged		Sample ID	SHM-05-41C-SPR20
Purge Start	13:28	Gallons Purged		Sampled by	Diane Champagne
Purge End	14:38			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:30		180	10.73	0.00	5.23	10.83	9.54	0.7	12.92	323.9		
13:35	5	180	10.79	0.00	5.25	10.78	8.14	0.62	12.64	325.4		
13:40	5	180	10.79	0.00	5.6	9.999	9.35	0.51	12.75	292.1		
13:45	5	180	10.79	0.00	6.08	7.494	8.88	0.43	12.24	205.8		
13:50	5	180	10.79	0.00	6.1	7.344	5.11	0.43	12.2	199.5		
13:55	5	180	10.79	0.00	6.62	6.444	8.5	0.53	12.13	135		
14:00	5	180	10.79	0.00	6.23	5.775	8.37	0.4	11.85	124.6		
14:05	5	180	10.79	0.00	6.26	5.216	8.36	0.39	12.28	106.5		
14:10	5	180	10.79	0.00	6.2	4.666	8.38	0.38	12.33	92.1		
14:15	5	180	10.79	0.00	6.16	4.571	8.13	0.38	12.3	83.7		
14:20	5	180	10.73	0.00	6.2	4.549	7.96	0.37	12.36	89.7		

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Missing bolts, but inside of well box has stripped threads. Bolts will not secure lid

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Nearfields

Well Locked at Arrival: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Condition of Well: Fair
Well Completion: Flush mount

Well Locked at Departure: no
Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-03	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	73, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	5.18	Total Depth (ft-bmp)	52.3	Water Column(ft)	47
				Gallons in Well	7.66
MP Elevation		Pump Intake (ft-bmp)	47	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	12:10	Volumes Purged		Sample ID	SHM-13-03-SPR20
Purge Start	11:06	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	#Error			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:05		100	9.98	0.00	7.13	0.705	22.8	7.02	15.22	-25.4	Clear	No
11:10	5	100	5.19	0.00	6.51	0.4	38.6	3.87	13.5	38.8	Clear	No
11:15	5	100	5.19	0.00	6.28	0.414	18.8	3.46	13.64	0.1	Clear	No
11:20	5	100	5.19	0.00	6.15	0.421	5.38	3.43	14	-5.8	Clear	No
11:25	5	100	5.19	0.00	6.09	0.428	2.08	3.29	14.19	-6.4	Clear	No
11:30	5	100	5.19	0.00	6.03	0.432	0.02	3.3	14.22	-7.1	Clear	No
11:35	5	100	5.19	0.00	5.96	0.442	0.02	3.2	14.24	-8.9	Clear	No
11:40	5	100	5.19	0.00	5.9	0.457	0.02	3.25	14.28	-12	Clear	No
11:45	5	100	5.19	0.00	5.79	0.547	0.02	3.18	15.03	-18.1	Clear	No
11:50	5	100	5.19	0.00	5.65	0.972	0.02	3.27	14.93	-34.4	Clear	No
11:55	5	100	5.19	0.00	5.82	1.061	0.02	3.29	15.37	-40.4	Clear	No
12:00	5	100	5.19	0.00	5.86	1.065	0.02	3.25	15.48	-40.6	Clear	No
12:05	5	100	5.19	0.00	5.77	1.057	0.02	3.21	15.38	-38.3	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____
Condition of Well: Some kind of obstruction/kink at 5' _____
Well Completion: Stick-up _____

Well Locked at Arrival: no _____
Well Locked at Departure: no _____
Key Number To Well: NA _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-93-22B	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	22C, Sunny, No wind
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
				Well Casing Material	PVC
Static Water Level (ft-bmp)	6.89	Total Depth (ft-bmp)	94.15	Water Column(ft)	87
MP Elevation		Pump Intake (ft-bmp)	34.5	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	13:30	Volumes Purged		Sample ID	SHM-93-22B-SPR20
Purge Start	12:25	Gallons Purged		Sampled by	Desmond Bedard
Purge End	13:30			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:25		160	6.89	0.00	6.34	0.49	64.6	1.1	10.18	90.6	Clear and colorless	None
12:30	5	120	6.9	0.00	4.69	0.494	45.2	0.82	10.39	156.5	Clear and colorless	None
12:35	5	120	6.89	0.00	5.05	0.498	45.3	1.41	10.7	137.6	Clear and colorless	None
12:40	5	120	6.89	0.00	5.59	0.498	61.4	0.65	10.45	108.2	Clear and colorless	None
12:45	5	120	6.89	0.00	5.85	0.497	53.3	0.48	10.89	102.2	Clear and colorless	None
12:50	5	120	6.89	0.00	5.96	0.495	48.7	0.48	10.58	93.9	Clear and colorless	None
12:55	5	120	6.89	0.00	6.15	0.499	26.6	0.4	10.99	83.1	Clear and colorless	None
13:00	5	120	6.89	0.00	6.21	0.499	31.1	0.4	10.98	80.6	Clear and colorless	None
13:05	5	120	6.89	0.00	6.26	0.491	19.4	0.38	11.01	78.5	Clear and colorless	None
13:10	5	120	6.89	0.00	5.98	0.49	19	0.35	10.92	94.9	Clear and colorless	None
13:15	5	120	6.89	0.00	6.11	0.491	17.1	0.33	11.03	86.2	Clear and colorless	None
13:20	5	120	6.89	0.00	6.17	0.488	16.7	0.34	10.97	83.9	Clear and colorless	None
13:25	5	120	6.89	0.00	6.13	0.481	17.3	0.32	10.96	87.1	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used tubing found in well		

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North of EW treatment building
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-01-38A		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	70, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	Steel
Static Water Level (ft-bmp)	4.04	Total Depth (ft-bmp)	8.84	Water Column(ft)	5	Gallons in Well	0.19
MP Elevation		Pump Intake (ft-bmp)	4	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	14:30	Volumes Purged		Sample ID	SHP-01-38A	Sampled by	Gabriel O'Connor
Purge Start	13:20	Gallons Purged		Replicate/ Code No.	SHL-DUP04-SPR20		
Purge End	14:47						

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
13:25		100	4.1	0.13	7.9	0.112	45.4	6.74	12.95	-44.9	Clear	No
13:30	5	100	4.1	0.00	6.2	0.14	11.6	4.17	10.54	-6.2	Clear	No
13:35	5	100	4.1	0.00	6.23	0.142	4.01	3.6	11.72	-3.1	Clear	No
13:40	5	100	4.1	0.00	6.17	0.142	0.94	3.68	10.77	-1.5	Clear	No
13:45	5	100	4.1	0.00	6.11	0.143	0.02	3.38	10.85	0.9	Clear	No
13:50	5	100	4.1	0.00	6.12	0.143	0.02	3.32	10.77	1.2	Clear	No
13:55	5	100	4.1	0.00	6.13	0.143	0.02	3.33	10.78	1.3	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-06A		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	Sun 53
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	28.6	Total Depth (ft-bmp)	86	Water Column(ft)	57	Gallons in Well	5.25
MP Elevation		Pump Intake (ft-bmp)	83	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:10	Volumes Purged		Sample ID	SHP-2016-6A-SPR20	Sampled by	Diane Champagne
Purge Start	08:45	Gallons Purged					
Purge End	09:32			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:45		120	28.7	0.00	7.68	0.351	5.61	0.99	11.32	31.1	No	No
08:50	5	120	28.7	0.00	7.68	0.338	5.43	0.84	11.53	29.1	No	No
08:55	5	120	28.7	0.00	7.61	0.332	5.07	0.87	11.63	25.6	No	No
09:00	5	120	28.7	0.00	7.64	0.33	5.11	0.84	11.62	24.4	No	No
09:05	5	120	29.6	0.00	7.63	0.33	5.23	0.88	11.65	23.1	No	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:			

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Nearfields	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-06B		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	Sun 53
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	21	Total Depth (ft-bmp)	112	Water Column(ft)	91	Gallons in Well	8.32
MP Elevation		Pump Intake (ft-bmp)	107	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	10:55	Volumes Purged		Sample ID	SHP-2016-6B-Spr20	Sampled by	Diane Champagne
Purge Start	09:32	Gallons Purged					
Purge End	11:12			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:35		115	21.6	0.00	7.42	0.417	54.2	1.1	12.67	90.6	Silty grey	Yes
09:41	6	115	21.99	0.00	7.26	0.34	50.1	0.78	13.06	83.7	Silty grey	Yes
09:47	6	115	22.2	0.00	7.26	0.335	14.1	0.7	12.77	77.9	Silty grey	Yes
09:50	3	115	22.33	0.00	7.24	0.334	13.1	0.58	13.01	74.6	Silty grey	Yes
09:55	5	115	22.4	0.00	7.32	0.338	14.9	0.52	13.18	69.1	Silty grey	Yes
10:00	5	115	22.6	0.00	7.22	0.36	15.9	0.47	13.38	70.3	Silty grey	Yes
10:05	5	115	22.7	0.00	7.27	0.573	15.3	0.4	13.01	67.5	Silty grey	Yes
10:10	5	115	22.77	0.00	7.12	1.001	14.1	0.4	13.21	58.9	Silty grey	Yes
10:17	7	115	22.79	0.00	7.29	1.12	13.3	0.44	13.72	22.3	Silty grey	Yes
10:22	5	115	22.79	0.00	7.27	1.105	13.7	0.42	13.72	14.2	Silty grey	Yes
10:25	3	115	22.79	0.00	7.28	1.09	13.8	0.41	13.53	2.5	Silty grey	Yes
10:33	8	115	22.83	0.00	7.32	1.056	13.8	0.38	14.07	-4.1	Silty grey	Yes
10:39	6	115	22.79	0.00	7.25	1.016	4.28	0.38	13.74	-6.5	Silty grey	Yes
10:43	4	115	22.79	0.00	7.27	0.98	4.44	0.38	13.99	-10.5	Silty grey	Yes
10:45	2	115	22.79	0.00	7.28	0.978	3.92	0.39	13.96	-12.4	Silty grey	Yes
10:50	5	115	22.79	0.00	7.23	0.971	3.83	0.38	13.89	-13.9	Silty grey	Yes

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Dissolved Organic Carbon

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____
Condition of Well: Nearfields _____
Well Completion: Stick-up _____

Well Locked at Arrival: yes _____
Well Locked at Departure: yes _____
Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-06C		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	Sun 66
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	20.29	Total Depth (ft-bmp)	133	Water Column(ft)	113	Gallons in Well	10.3
MP Elevation		Pump Intake (ft-bmp)	130	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	12:55	Volumes Purged		Sample ID	SHO-2016-06C-SPR20	Sampled by	Diane Champagne
Purge Start	11:17	Gallons Purged					
Purge End	13:14						
Replicate/ Code No.							

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
11:19		180	20.51	0.00	7.17	0.245	26.1	0.98	15.41	81.6	No	Yes
11:25	6	180	20.51	0.00	6.9	0.243	22.2	0.67	15.65	70.8	No	Yes
11:32	7	180	20.51	0.00	6.95	0.242	18.5	0.57	15.87	66.7	No	Yes
11:35	3	180	20.61	0.00	6.95	0.243	4.84	0.57	15.76	67.2	No	Yes
11:41	6	180	20.61	0.00	6.9	0.244	4.11	0.53	15.36	75	No	Yes
11:56	15	180	20.61	0.00	6.95	0.244	3.38	0.45	15.32	93	No	Yes
12:00	4	180	20.61	0.00	6.89	0.245	2.87	0.44	17.14	105.9	No	Yes
12:05	5	180	20.61	0.00	6.78	0.244	2.84	0.43	16.91	125.3	No	Yes
12:10	5	180	20.61	0.00	6.76	0.244	2.7	0.42	17.22	133.3	No	Yes
12:15	5	180	20.61	0.00	6.7	0.244	2.11	0.42	17.85	146.3	No	Yes
12:20	5	180	20.61	0.00	6.53	0.245	3.04	0.42	17.41	168.3	No	Yes
12:25	5	180	20.61	0.00	6.11	0.244	3.02	0.41	17.6	207.5	No	Yes
12:31	6	180	20.61	0.00	5.96	0.245	2.97	0.41	17.45	238.8	No	Yes
12:35	4	180	20.61	0.00	5.9	0.244	2.83	0.4	17.4	271.1	No	Yes
12:40	5	180	20.61	0.00	5.96	0.245	2.65	0.4	17.39	276.4	No	Yes
12:46	6	180	20.61	0.00	6.03	0.245	2.47	0.41	17.49	268.3	No	Yes
12:51	5	180	20.61	0.00	6.03	0.244	2.74	0.43	17.3	271.9	No	Yes

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Alkalinity				
Chloride/Sulfate				
Dissolved Organic Carbon				
Comments:				

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Nearfields	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-4A		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	17C, Sunny, No wind
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	17.44	Total Depth (ft-bmp)	32.6	Water Column(ft)	15	Gallons in Well	0.62
MP Elevation		Pump Intake (ft-bmp)	27.6	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	11:25	Volumes Purged		Sample ID	SHP-2016-4A-SPR20	Sampled by	Desmond Bedard
Purge Start	10:30	Gallons Purged					
Purge End	11:25			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:30		140	17.44	0.00	8.89	0.049	112.8	9.16	10.93	108.9	Clear and colorless	None
10:35	5	120	17.78	0.00	6.24	0.045	15.4	8.41	10.26	160.7	Clear and colorless	None
10:40	5	120	17.76	0.00	4.92	0.046	21.9	8.3	10.71	212.1	Clear and colorless	None
10:45	5	120	17.75	0.00	4.2	0.043	13.4	8.18	10.03	250.5	Clear and colorless	None
10:50	5	120	17.75	0.00	4.67	0.046	7.52	7.89	10.55	223.9	Clear and colorless	None
10:55	5	120	17.75	0.00	4.95	0.045	2.85	7.41	10.65	209.9	Clear and colorless	None
11:00	5	120	17.75	0.00	5.51	0.045	1.99	7.13	10.85	173.7	Clear and colorless	None
11:05	5	120	17.75	0.00	5.67	0.046	2.45	6.8	11.22	165.1	Clear and colorless	None
11:10	5	120	17.75	0.00	5.78	0.046	2.04	6.7	11.21	157.2	Clear and colorless	None
11:15	5	120	17.75	0.00	5.84	0.047	2.09	6.67	11.03	152.3	Clear and colorless	None
11:20	5	120	17.75	0.00	5.82	0.046	1.6	6.48	11.16	153.1	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used tubing found in well

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Northwest of EW treatment building

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Condition of Well: Good

Well Locked at Departure: yes

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-4B		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts					Weather(°F)	15C, Sunny, No wind
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	17.34	Total Depth (ft-bmp)	92.35	Water Column(ft)	75	Gallons in Well	3.05
MP Elevation		Pump Intake (ft-bmp)	45.3	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	10:10	Volumes Purged		Sample ID	SHP-2016-4B-SPR20	Sampled by	Desmond Bedard
Purge Start	09:15	Gallons Purged					
Purge End	10:10			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
09:15		160	17.34	0.00	6.59	0.195	5.54	6.5	8.94	7.8	Clear and colorless	None
09:20	5	120	17.39	0.00	5.25	0.188	6.12	3.62	8.91	88.6	Clear and colorless	None
09:25	5	120	17.37	0.00	5.17	0.19	3.77	1.27	9.06	86.3	Clear and colorless	None
09:30	5	120	17.37	0.00	5.13	0.189	3.22	0.89	9.03	73.2	Clear and colorless	None
09:35	5	120	17.37	0.00	5.74	0.199	1.31	0.66	9.04	54.9	Clear and colorless	None
09:40	5	120	17.37	0.00	5.94	0.201	0.12	0.58	9.07	44.3	Clear and colorless	None
09:45	5	120	17.37	0.00	6.25	0.203	0.19	0.49	9.55	26.3	Clear and colorless	None
09:50	5	120	17.37	0.00	6.5	0.206	0.21	0.45	10.17	8.5	Clear and colorless	None
09:55	5	120	17.37	0.00	6.52	0.208	0.14	0.42	10.08	6.7	Clear and colorless	None
10:00	5	120	17.37	0.00	6.53	0.207	0.11	0.39	10.04	5.5	Clear and colorless	None
10:05	5	120	17.37	0.00	6.52	0.207	0.09	0.39	10.02	4.4	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used new tubing		

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North west of EW treatment

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



building _____
Condition of Well: Good _____
Well Completion: Stick-up _____

Well Locked at Departure: yes _____
Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-5A	Date	5/21/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	25C, Sunny, Light breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	14.48	Total Depth (ft-bmp)	32.55	Water Column(ft)	18
				Gallons in Well	0.73
MP Elevation		Pump Intake (ft-bmp)	27.5	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:50	Volumes Purged		Sample ID	SHM-2016-5A-SPR20
Purge Start	15:05	Gallons Purged		Sampled by	Desmond Bedard
Purge End	15:50			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
15:05		120	14.48	0.00	6.79	0.225	34.2	1.21	10.33	52.6	Clear and colorless	No ne
15:10	5	120	14.49	0.00	6.28	0.194	8.89	0.49	10.27	112.2	Clear and colorless	No ne
15:15	5	120	14.49	0.00	5.16	0.176	5.76	0.31	10.04	175.1	Clear and colorless	No ne
15:20	5	120	14.49	0.00	5.26	0.178	4.98	0.26	9.73	163.7	Clear and colorless	No ne
15:25	5	120	14.49	0.00	5.62	0.179	4.61	0.26	9.79	140.6	Clear and colorless	No ne
15:30	5	120	14.49	0.00	5.85	0.178	4.88	0.26	9.87	125.6	Clear and colorless	No ne
15:35	5	120	14.49	0.00	5.98	0.18	4.12	0.22	9.89	114.1	Clear and colorless	No ne
15:40	5	120	14.49	0.00	6.02	0.179	5.07	0.24	9.79	112.3	Clear and colorless	No ne
15:45	5	120	14.49	0.00	5.96	0.18	4.63	0.23	9.6	114.3	Clear and colorless	No ne

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used tubing found in well

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North west of EW treatment building	Well Locked at Arrival: yes
Condition of Well: Good	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-5B		Date	5/21/2020	
Project Name/Location	Devens, Massachusetts				Weather(°F)	25C, Sunny, Light breeze	
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	14.49	Total Depth (ft-bmp)	92.35	Water Column(ft)	78	Gallons in Well	3.16
MP Elevation		Pump Intake (ft-bmp)	42.5	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	15:00	Volumes Purged		Sample ID	SHP-2016-5B-SPR20	Sampled by	Desmond Bedard
Purge Start	14:10	Gallons Purged					
Purge End	15:00			Replicate/ Code No.			

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:10		160	14.49	0.00	5.68	0.375	23.4	1.28	10.5	113.9	Clear and colorless	None
14:15	5	130	14.5	0.00	5.06	0.353	5.11	1.1	10.64	119.3	Clear and colorless	None
14:20	5	120	14.5	0.00	5.16	0.357	7.66	0.89	10.48	110.7	Clear and colorless	None
14:25	5	120	14.5	0.00	5.39	0.355	3.38	0.68	10.43	94.7	Clear and colorless	None
14:30	5	120	14.5	0.00	5.58	0.35	8.42	0.58	10.44	82.1	Clear and colorless	None
14:35	5	120	14.5	0.00	5.65	0.351	4.97	0.5	10.23	79.9	Clear and colorless	None
14:40	5	120	14.5	0.00	5.61	0.351	5.44	0.45	10.29	81.1	Clear and colorless	None
14:45	5	120	14.5	0.00	6.02	0.352	3.58	0.36	10.21	57.7	Clear and colorless	None
14:50	5	120	14.5	0.00	6.01	0.351	3.54	0.34	10.27	59.4	Clear and colorless	None
14:55	5	120	14.5	0.00	5.99	0.352	3.62	0.33	10.31	61.9	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Used new tubing

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North west of EW treatment building
 Condition of Well: Good

Well Locked at Arrival: yes
 Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-5A	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	70, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	7.42	Total Depth (ft-bmp)	27.11	Water Column(ft)	20
				Gallons in Well	0.8
MP Elevation		Pump Intake (ft-bmp)	23	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	09:50	Volumes Purged		Sample ID	EPA-PZ-2012-5A-SPR20
Purge Start	08:45	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	10:12			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:50		100	7.46	0.13	7.84	0.106	14.7	4.93	9.71	103.3	Clear	
08:55	5	100	7.46	0.00	5.76	0.105	4.26	4.04	9.51	73.6	Clear	
09:00	5	100	7.46	0.40	5.67	0.108	8.3	4.01	9.46	72.5	Clear	
09:05	5	100	7.46	0.00	5.64	0.107	11.2	3.94	9.33	72.5	Clear	
09:10	5	100	7.46	0.79	5.62	0.108	8.7	3.87	9.6	70.7	Clear	
09:15	5	100	7.46	0.92	5.59	0.107	9.36	3.89	9.59	68.3	Clear	
09:20	5	100	7.46	0.00	5.57	0.107	4.62	3.83	9.5	65.7	Clear	
09:25	5	100	7.46	0.00	5.56	0.107	8	3.76	9.6	62.9	Clear	
09:30	5	100	7.46	1.06	5.56	0.106	5.84	3.78	9.26	60.1	Clear	
09:35	5	100	7.46	0.00	5.56	0.106	1.79	3.8	9.39	57.5	Clear	
09:40	6	100	7.46	0.00	5.57	0.106	2.15	3.74	9.43	54.4	Clear	
09:45	5	100	7.46	0.00	5.57	0.106	2.78	3.73	9.57	52.3	Clear	

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Follow pink flagging tape from behind WWTP, bushwhack/cut a path		

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Information

Well Location: SHL
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-5B	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	70, sun
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	6.72	Total Depth (ft-bmp)	85.72	Water Column(ft)	79
				Gallons in Well	3.21
MP Elevation		Pump Intake (ft-bmp)	80	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:20	Volumes Purged		Sample ID	EPA-PZ-2012-5B-SPR20
Purge Start	10:25	Gallons Purged		Sampled by	Gabriel O'Connor
Purge End	11:35			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:30		100	6.8	0.13	5.88	0.418	25.6	4.18	12.94	-11.9	Clear	No
10:35	5	100	6.81	0.26	6.38	0.461	110	4.12	11.28	-1.7	Clear	No
10:40	5	100	6.81	0.00	6.37	0.462	61	3.94	10.83	6.5	Clear	No
10:45	5	100	6.81	0.53	6.35	0.467	44.7	3.84	11.15	10.5	Clear	No
10:50	5	100	6.81	0.79	6.33	0.467	49.8	3.77	11.1	13	Clear	No
10:55	5	100	6.81	0.00	6.32	0.463	35.2	3.75	10.86	15.5	Clear	No
11:00	5	100	6.81	0.00	6.3	0.464	33.3	3.8	10.88	17.1	Clear	No
11:05	5	100	6.81	0.00	6.29	0.464	24.4	3.62	10.94	19.7	Clear	No
11:09	4	100	6.81	0.00	6.28	0.465	24.7	3.7	11.02	22	Clear	No
11:14	5	100	6.81	0.00	6.25	0.464	23.1	3.69	10.83	24.8	Clear	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Follow pink flagging from behind WWTP, bushwhack or cut a path.

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL
 Condition of Well: Good
 Well Locked at Arrival: yes
 Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Stick-up

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-6A	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	18C, Sunny, Light breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	21.77	Total Depth (ft-bmp)	33.2	Water Column(ft)	11
MP Elevation		Pump Intake (ft-bmp)	27.2	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	12:00	Volumes Purged		Sample ID	EPA-PZ-2012-6A-SPR20
Purge Start	10:55	Gallons Purged		Sampled by	Desmond Bedard
Purge End	12:00			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:55		120	21.77	0.00	7.08	0.097	117	11.73	13.64	198	Clear and colorless	None
11:00	5	120	21.77	0.00	4.96	0.082	105	9.91	12.99	339.8	Clear and colorless	None
11:05	5	120	21.77	0.00	3.86	0.082	27.1	8	12.98	390.1	Clear and colorless	None
11:10	5	120	21.77	0.00	4.65	0.082	29.4	8.51	12.89	351.2	Clear and colorless	None
11:15	5	120	21.77	0.00	4.6	0.081	25	8.18	12.67	356.2	Clear and colorless	None
11:20	5	120	21.77	0.00	5.11	0.081	21.9	8.16	12.97	332.4	Clear and colorless	None
11:25	5	120	21.77	0.00	5.82	0.082	17.3	8.09	12.95	297.4	Clear and colorless	None
11:30	5	120	21.77	0.00	6.01	0.083	7.14	8.18	13.59	283.7	Clear and colorless	None
11:35	5	120	21.77	0.00	6.12	0.082	6.99	7.89	13.33	284.4	Clear and colorless	None
11:40	5	120	21.77	0.00	6.04	0.083	5.18	7.98	13.64	292.2	Clear and colorless	None
11:45	5	120	21.77	0.00	6.24	0.083	4.07	8.55	13.38	283.3	Clear and colorless	None
11:50	5	120	21.77	0.00	6.26	0.082	3.99	8.08	13.65	289.8	Clear and colorless	None
11:55	5	120	21.77	0.00	6.3	0.084	4.04	8.01	13.72	281.8	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used tubing found in well		

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: West of EW treatment building
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: EPA key

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-6B	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	12C, Sunny, Light breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	21.79	Total Depth (ft-bmp)	80.3	Water Column(ft)	59
				Gallons in Well	2.38
MP Elevation		Pump Intake (ft-bmp)	48.9	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	09:40	Volumes Purged		Sample ID	EPA-PZ-2012-6B-SPR20
Purge Start	08:40	Gallons Purged		Sampled by	Desmond Bedard
Purge End	09:40			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:40		160	21.79	0.00	7.57	0.143	23.4	6.25	9.93	185.3	Clear and colorless	None
08:45	5	140	21.81	0.00	4.73	0.093	27.4	2.17	10.17	316	Clear and colorless	None
08:50	5	120	21.8	0.00	4.9	0.099	11.7	1.31	10.8	237.4	Clear and colorless	None
08:55	5	120	21.8	0.00	5.82	0.104	5.48	1.09	11.18	145.2	Clear and colorless	None
09:00	5	120	21.8	0.00	6.08	0.108	9.21	0.81	11.42	99.8	Clear and colorless	None
09:05	5	120	21.8	0.00	6.31	0.111	8.05	0.68	11.34	79.2	Clear and colorless	None
09:10	5	120	21.8	0.00	6.32	0.111	7.93	0.61	11.21	73.6	Clear and colorless	None
09:15	5	120	21.8	0.00	6.34	0.112	8.22	0.54	11.36	69.2	Clear and colorless	None
09:20	5	120	21.8	0.00	6.4	0.114	6.81	0.52	11.27	60.3	Clear and colorless	None
09:25	5	120	21.8	0.00	6.51	0.115	7.03	0.49	11.31	51.6	Clear and colorless	None
09:30	5	120	21.8	0.00	6.54	0.116	6.91	0.46	11.31	50.9	Clear and colorless	None
09:34	4	120	21.8	0.00	6.46	0.117	6.99	0.45	11.24	52.3	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used new tubing		

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Information

Well Location: West of EW treatment building
Condition of Well: Good
Well Completion: Stick-up

Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: EPA key

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-7A	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	18C, Sunny, Light breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	21.53	Total Depth (ft-bmp)	29.1	Water Column(ft)	8
MP Elevation		Pump Intake (ft-bmp)	24.1	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	13:30	Volumes Purged		Sample ID	EPA-PZ-2012-7A-SHP20
Purge Start	12:45	Gallons Purged		Sampled by	Desmond Bedard
Purge End	13:30			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
12:45		180	21.53	0.00	6.69	0.529	426	8.41	13.52	212.4	Clear and colorless	None
12:50	5	40	21.59	0.00	4.71	0.557	7.83	6.26	15.29	338	Clear and colorless	None
12:55	5	120	21.58	0.00	5.38	0.583	5.89	5.98	16.8	302.1	Clear and colorless	None
13:00	5	120	21.58	0.00	5.81	0.59	4.67	5.03	16.53	287.4	Clear and colorless	None
13:05	5	120	21.58	0.00	5.82	0.595	4.87	6.06	16.55	288.9	Clear and colorless	None
13:10	5	120	21.58	0.00	5.77	0.6	4.89	5.99	16.51	292.9	Clear and colorless	None
13:15	5	120	21.58	0.00	5.88	0.629	2.58	5.74	16.44	289	Clear and colorless	None
13:20	5	120	21.58	0.00	5.81	0.62	2.53	5.68	16.53	290.7	Clear and colorless	None
13:25	5	120	21.58	0.00	5.79	0.626	2.61	5.64	16.49	291.4	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments: Tubing found in well was clogged; used new tubing

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: On Cook street	Well Locked at Arrival: no
Condition of Well: Good	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-7B	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	22C, Sunny, Light breeze
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
				Well Casing Material	PVC
Static Water Level (ft-bmp)	21.6	Total Depth (ft-bmp)	61.3	Water Column(ft)	40
				Gallons in Well	1.61
MP Elevation		Pump Intake (ft-bmp)	48.6	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	15:15	Volumes Purged		Sample ID	EPA-PZ-2012-7B-SPR20
Purge Start	14:00	Gallons Purged		Sampled by	Desmond Bedard
Purge End	15:15			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
14:00		160	21.6	0.00	7.81	0.162	15.2	2.79	15.58	24.2	Clear and colorless	None
14:05	5	120	21.61	0.00	4.41	0.141	6.58	1.77	16.55	167.6	Clear and colorless	None
14:10	5	120	21.61	0.00	6.41	0.145	3.72	0.88	16.445	44.5	Clear and colorless	None
14:25	15	120	21.61	0.00	6.62	0.114	4.86	1.17	12.22	87.9	Clear and colorless	None
14:30	5	120	21.61	0.00	4.03	0.117	6.91	0.61	13.29	192.9	Clear and colorless	None
14:35	5	120	21.61	0.00	4.71	0.114	6.81	0.48	13.07	142.1	Clear and colorless	None
14:40	5	120	21.61	0.00	5.73	0.114	5.29	0.41	13.44	89	Clear and colorless	None
14:45	5	120	21.62	0.00	6.14	0.115	4.98	0.36	13.49	63	Clear and colorless	None
14:50	5	120	21.62	0.00	5.89	0.115	6.53	0.43	13.34	77.6	Clear and colorless	None
14:55	5	100	21.62	0.00	6.29	0.114	5.93	0.39	13.62	52.1	Clear and colorless	None
15:00	5	100	21.61	0.00	6.55	0.117	5.05	0.38	13.61	39.2	Clear and colorless	None
15:05	5	100	21.61	0.00	6.61	0.116	4.99	0.37	13.58	37	Clear and colorless	None
15:10	5	100	21.61	0.00	6.56	0.117	5.06	0.37	13.62	38.6	Clear and colorless	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			
Comments:	Used tubing found in well		

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
= gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: On Cook street
Condition of Well: Good
Well Completion: Flush mount

Well Locked at Arrival: no
Well Locked at Departure: no
Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = millisiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-07	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 70
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	NA
Static Water Level (ft-bmp)	18.68	Total Depth (ft-bmp)	37	Water Column(ft)	18
				Gallons in Well	2.98
MP Elevation		Pump Intake (ft-bmp)	16	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	09:25	Volumes Purged		Sample ID	SHM-13-07-SPR20
Purge Start	08:31	Gallons Purged		Sampled by	Diane Champagne
Purge End	09:35			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
08:34		240	18.69	0.00	6.94	0.485	84.1	2.36	16.32	68.7	No	No
08:38	4	240	18.69	0.00	6.6	0.494	43.7	2.1	16.59	79.9	No	No
08:45	7	240	18.69	0.00	6.2	0.499	28.2	1.81	16.6	106.8	No	No
08:50	5	240	18.69	0.00	5.76	0.497	20.9	1.57	16.68	137.9	No	No
08:55	5	240	18.69	0.00	5.6	0.492	16	1.45	16.7	156.1	No	No
09:00	5	240	18.69	0.00	5.32	0.483	11.9	1.28	16.96	186.1	No	No
09:05	5	240	18.69	0.00	5.59	0.484	11.2	1.06	17.35	197.7	No	No
09:10	5	240	18.69	0.00	5.67	0.478	9.12	1	17.28	196.4	No	No
09:15	5	240	18.69	0.00	5.61	0.477	8.88	0.95	17.23	199.4	No	No
09:20	5	240	18.69	0.00	5.64	0.471	8.63	0.92	17.42	199.4	No	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: 139 Well Locked at Arrival: no
 Condition of Well: Slightly sunken in Well Locked at Departure: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-08	Date	5/22/2020
Project Name/Location	Devens, Massachusetts			Weather(°F)	Sun 75
Measuring Pt. Description	Top of Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
				Well Casing Material	PVC
Static Water Level (ft-bmp)	20.2	Total Depth (ft-bmp)	65	Water Column(ft)	45
MP Elevation		Pump Intake (ft-bmp)	60	Purge Method	Low-Flow
				Sample Method	Low-Flow
Sample Time	11:10	Volumes Purged		Sample ID	SHM-13-08-SPR20
Purge Start	10:17	Gallons Purged		Sampled by	Diane Champagne
Purge End	11:24			Replicate/ Code No.	

Time	Minutes Elapsed	Rate (mL/min)	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
											Color	Odor
10:20		240	20.21	0.00	5.58	0.285	76.4	5.67	15.2	147.2	None	No
10:25	5	240	20.21	0.00	5.44	0.279	69.9	4.97	15.52	174.9	None	No
10:30	5	240	20.21	0.00	5.28	0.275	45.6	4.14	15.2	209.3	None	No
10:35	5	240	20.21	0.00	5.17	0.297	32.9	3.19	15.08	237.7	None	No
10:40	5	240	20.21	0.00	5.12	0.312	25.9	2.15	15.4	258.2	None	No
10:45	5	240	20.21	0.00	5.25	0.312	13.3	1.87	15.68	255.1	None	No
10:50	5	240	20.21	0.00	5.22	0.313	10.2	1.47	15.71	253.1	None	No
10:55	5	240	20.21	0.00	4.97	0.314	8.6	1.05	15.53	258.9	None	No
11:01	6	240	20.21	0.00	5.02	0.314	7.82	1	15.66	257.2	None	No
11:05	4	240	20.21	0.00	5.05	0.314	7.66	0.99	15.42	252.1	None	No

Constituent Sampled	Container	Number	Preservative
Dissolved Metals			
Alkalinity			
Chloride/Sulfate			
Dissolved Organic Carbon			

Comments:

Well Casing Volume Conversion

Well diameter (inches) 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 = gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: North impact area
 Condition of Well: Good
 Well Locked at Arrival: no
 Well Locked at Departure: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	PZ-12-10	Date	10/26/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39.0 degrees F and Rain and Fog/Mist. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	23.4	Total Depth (ft-bmp)	32	Water Column(ft)	8.6
MP Elevation		Pump Intake (ft-bmp)	39.5	Purge Method	Low-Flow
Sample Time	09:40	Volumes Purged	1.77	Sample ID	PZ-12-10-FAL20
Purge Start	08:35	Gallons Purged	2.48	Replicate/ Code No.	PZ-12-10-FAL20 MS/MSD
Purge End	10:24				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:45	0	0	140	23.4	0.00	7.85	0.071	2.64	4.87	9.1	137.5	Clear	None
08:50	5	5	140	23.4	0.00	7.58	0.07	2.84	4.8	9	144.5	Clear	None
08:55	5	10	140	23.4	0.00	7.41	0.07	2.54	4.76	9.1	148.5	Clear	None
09:00	5	15	140	23.4	0.00	7.22	0.07	2.3	4.71	9.2	152.9	Clear	None
09:05	5	20	140	23.41	0.00	7.18	0.07	2.39	4.66	9.2	154.1	Clear	None
09:10	5	25	140	23.41	0.00	7.1	0.07	2.59	4.69	9.2	156.6	Clear	None
09:15	5	30	140	23.41	0.00	7.02	0.07	2.61	4.6	9.1	158.6	Clear	None
09:20	5	35	140	23.41	0.00	6.96	0.07	2.51	4.42	9	160.6	Clear	None
09:25	5	40	140	23.41	0.00	6.91	0.07	2.35	4.26	9.2	162.1	Clear	None
09:30	5	45	140	23.41	0.00	6.86	0.071	2.21	4.32	9.3	163.1	Clear	None
09:35	5	50	140	23.41	0.00	6.82	0.071	2.43	4.47	9.2	164.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-09	Date	10/26/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	41.0 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	24.72	Total Depth (ft-bmp)	30	Water Column(ft)	5.28
MP Elevation		Pump Intake (ft-bmp)	28	Purge Method	Low-Flow
Sample Time	11:40	Volumes Purged	2.93	Sample ID	PZ-12-09-FAL20
Purge Start	10:35	Gallons Purged	2.52	Replicate/ Code No.	PZ-12-09-FAL20-MS/MSD
Purge End	12:39				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:05	0	0	140	24.72	0.00	6.97	0.185	68.61	2.79	9.4	154.8	Black	None
11:10	5	5	140	24.72	0.00	6.99	0.186	61.75	1.44	9.8	139.8	Black	None
11:15	5	10	140	24.72	0.00	6.93	0.184	51.73	1.49	9.8	140.2	Black	None
11:20	5	15	140	24.72	0.00	7.04	0.182	43.22	1.69	9.8	135.9	Black	None
11:25	5	20	140	24.72	0.00	7.06	0.182	39.26	1.46	9.7	128.3	Black	None
11:30	5	25	140	24.72	0.00	6.99	0.181	38.28	1.36	9.8	124.4	Black	None
11:36	6	31	140	24.71	0.00	6.99	0.182	39.64	1.39	9.8	122.3	Black	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392		Well ID	SHM-05-39B		Date	10/26/2020	
Project Name/Location	Devens, Massachusetts			Weather(°F)	39.9 degrees F and Light Rain. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5	Well Casing Material	PVC	
Static Water Level (ft-bmp)	11.5	Total Depth (ft-bmp)	65.85	Water Column(ft)	54.35	Gallons in Well	13.8	
MP Elevation		Pump Intake (ft-bmp)	61.85	Purge Method	Low-Flow	Sample Method	Low-Flow	
Sample Time	13:00	Volumes Purged	0.70	Sample ID	SHM-05-39B-FAL20	Sampled by	Nick Burch	
Purge Start	10:29	Gallons Purged	9.64	Replicate/ Code No.				
Purge End	13:08							

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:30	0	0	250	11.5	0.00	7.3	0.12	52.5	5	12	269	Clear	None
10:35	5	5	250	12.5	0.00	5.38	0.116	49.7	3.17	12	317	Clear	None
10:40	5	10	250	13.5	0.00	5.28	0.116	48.3	3.12	12	324.7	Clear	None
10:45	5	15	250	14.5	0.00	5.27	0.117	47.5	3.02	12.2	322.3	Clear	None
10:50	5	20	250	15.6	0.00	5.31	0.111	41	5.51	11.3	317.4	Clear	None
10:55	5	25	250	15.65	0.00	5.36	0.108	44.8	7.05	10.6	309.3	Clear	None
11:00	5	30	250	15.65	0.00	5.44	0.112	35.2	7.87	10	295.2	Clear	None
11:05	5	35	250	15.65	0.00	5.5	0.114	31.8	8.02	10.1	281.7	Clear	None
11:10	5	40	250	15.65	0.00	5.55	0.119	28.2	8.42	10.2	268.8	Clear	None
11:15	5	45	250	15.65	0.00	5.62	0.124	25.6	8.81	10.1	255.1	Clear	None
11:20	5	50	250	15.65	0.00	5.72	0.13	24.5	9.12	9.8	240.9	Clear	None
11:25	5	55	250	15.65	0.00	5.78	0.136	23.5	9.19	9.8	232.2	Clear	None
11:30	5	60	250	15.65	0.00	5.87	0.143	22.1	9.3	9.9	215.1	Clear	None
11:35	5	65	250	15.65	0.00	5.92	0.148	22.8	9.37	10	203.7	Clear	None
11:40	5	70	250	15.65	0.00	5.95	0.149	20.9	9.4	10.1	195.5	Clear	None
11:45	5	75	250	15.65	0.00	6.05	0.168	21	9.41	10.2	183.5	Clear	None
11:50	5	80	250	15.65	0.00	6.18	0.186	20.3	9.42	10.2	162	Clear	None
11:55	5	85	250	15.65	0.00	6.24	0.204	19.7	9.49	10.1	148.5	Clear	None
12:00	5	90	250	15.65	0.00	6.38	0.242	18.7	9.51	10.2	120	Clear	None
12:05	5	95	250	15.65	0.00	6.49	0.265	18.8	9.53	10.1	90	Clear	None
12:10	5	100	250	15.65	0.00	6.5	0.412	25.6	4	11.4	47	Clear	None
12:15	5	105	250	16.1	0.00	6.56	0.437	21.9	2.35	11.6	30	Clear	None
12:20	5	110	250	16.45	0.00	6.68	0.448	19.7	1.35	11.5	2	Clear	None
12:25	5	115	250	16.8	0.00	6.75	0.458	17.1	1.02	11.4	-24.3	Clear	None
12:30	5	120	250	16.8	0.00	6.79	0.471	15.8	0.91	11.1	-41.3	Clear	None

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



12:35	5	125	250	16.8	0.00	6.8	0.48	13.7	0.88	11.3	-44.2	Clear	None
12:40	5	130	250	16.8	0.00	6.84	0.493	13.8	0.83	11.2	-52.6	Clear	None
12:45	5	135	250	16.8	0.00	6.88	0.512	12.4	0.79	11	-62	Clear	None
12:50	5	140	250	16.8	0.00	6.89	0.517	11.8	0.76	10.9	-66.5	Clear	None
12:55	5	145	250	16.8	0.00	6.91	0.523	11.5	0.77	10.8	-70.5	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHP	Well Locked at Arrival: no
Condition of Well: Good condition,Missing bolts	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-93-24A	Date	10/26/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	44.6 degrees F and Light Rain. The wind is blowing NE at 12.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	5
Static Water Level (ft-bmp)	16.7	Total Depth (ft-bmp)	25.91	Water Column(ft)	9.21
MP Elevation		Pump Intake (ft-bmp)	22.91	Purge Method	Low-Flow
Sample Time	15:30	Volumes Purged	0.28	Sample ID	SHM-93-24A-FAL20
Purge Start	14:46	Gallons Purged	2.64	Replicate/ Code No.	
Purge End	15:40				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:50	0	0	250	16.65	0.00	6.1	0.467	8.86	8.8	11.9	140	Clear	None
14:55	5	5	250	16.65	0.00	5.88	0.467	4.19	8.15	12.1	170.6	Clear	None
15:00	5	10	250	16.65	0.00	5.87	0.465	4.23	8.11	12.1	199.5	Clear	None
15:05	5	15	250	16.65	0.00	5.86	0.461	3.04	8.11	12.1	214	Clear	None
15:10	5	20	250	16.65	0.00	5.86	0.461	3.3	8.16	12	227	Clear	None
15:15	5	25	250	16.65	0.00	5.86	0.462	2.97	8.03	12.1	239.5	Clear	None
15:20	5	30	250	16.65	0.00	5.86	0.462	3.29	8.08	12	248	Clear	None
15:23	3	33	250	16.65	0.00	5.86	0.462	3.12	8.09	12	250	Clear	None
15:26	3	36	250	16.65	0.00	5.86	0.46	2.99	8.09	12	257.2	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHM	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-19	Date	10/26/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	44.1 degrees F and Light Rain and Fog/Mist. The wind is blowing NW at 12.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	23.9	Total Depth (ft-bmp)	30	Water Column(ft)	6.1
MP Elevation		Pump Intake (ft-bmp)	28	Purge Method	Low-Flow
Sample Time	14:50	Volumes Purged	0.72	Sample ID	SHL-19-FAL20
Purge Start	13:35	Gallons Purged	2.85	Replicate/ Code No.	
Purge End	15:07				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:40	0	0	140	23.91	0.00	6.98	0.176	224.03	4.08	9.7	141	Orange	None
13:45	5	5	140	23.91	0.00	6.96	0.176	182.73	3.99	9.7	141.5	Orange	None
13:50	5	10	140	23.91	0.00	6.9	0.175	135.23	3.75	9.9	142.2	Orange	None
13:55	5	15	140	23.91	0.00	6.86	0.175	92.86	3.65	10	142.3	Orange	None
14:00	5	20	140	23.91	0.00	6.84	0.175	68.47	3.56	9.9	142.3	Orange	None
14:05	5	25	140	23.91	0.00	6.81	0.174	51.57	3.49	10	142.2	Orange	None
14:10	5	30	140	23.91	0.00	6.79	0.175	38.46	3.56	9.8	142.4	Orange	None
14:15	5	35	140	23.91	0.00	6.78	0.175	31.05	3.78	9.8	142.2	Orange	None
14:21	6	41	140	23.91	0.00	6.77	0.176	27.42	3.93	10	141.9	Orange	None
14:25	4	45	140	23.9	0.00	6.77	0.176	21.7	3.97	10	141.8	Orange	None
14:30	5	50	140	23.9	0.00	6.76	0.177	19.91	4.03	9.9	141.7	Orange	None
14:36	6	56	140	23.9	0.00	6.75	0.177	15.91	4.25	10	141.8	Orange	None
14:40	4	60	140	23.91	0.00	6.74	0.177	14.54	4.3	10	141.8	Orange	None
14:45	5	65	140	23.91	0.00	6.74	0.178	15.93	4.35	9.9	142	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Information

Well Location:	Side of barrier wall	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-24	Date	10/26/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	42 °F, Overcast, N winds at 5 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	16.98	Total Depth (ft-bmp)	119.5	Water Column(ft)	102.52
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow
Sample Time	15:15	Volumes Purged		Sample ID	SHL-24-FAL20
Purge Start	15:00	Gallons Purged		Replicate/ Code No.	SHL-DUP09-FAL20
Purge End	16:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:05	0	0	250	17.3	0.00	6.93	0.202	-4.2	2.68	11.5	158.9	Clear	None
15:08	3	3	250	17.4	0.00	6.94	0.202	-4.5	2.7	11.5	158.9	Clear	None
15:11	3	6	250	17.45	0.00	6.97	0.202	-4.4	2.66	11.4	159.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHM-05-39A	Date	10/26/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	42 °F, Cold, N winds at 5 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	12.61	Total Depth (ft-bmp)	38.9	Water Column(ft)	26.29
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow
Sample Time	13:10	Volumes Purged		Sample ID	SHM-05-39A
Purge Start	12:19	Gallons Purged		Replicate/ Code No.	
Well Casing Material	PVC	Gallons in Well	4.27	Sample Method	Low-Flow
Sampled by	Connor Rosenbaum				

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:01	0	0	250	12.61	0.00							Clear	None
12:25	24	24	250	12.76	0.00	6.47	0.151	50.2	2.38	12.5	198.3	Clear	None
12:30	5	29	250	12.75	0.00	6.36	0.152	43.5	2.09	12.6	197.6	Clear	None
12:40	10	39	250	12.75	0.00	6.32	0.152	38.8	1.93	12.5	197.1	Clear	None
12:45	5	44	250	12.75	0.00	6.3	0.152	34.4	1.79	12.3	196.5	Clear	None
12:50	5	49	250	12.75	0.00	6.29	0.151	33	1.7	12.2	196.3	Clear	None
12:55	5	54	250	12.75	0.00	6.28	0.15	33.5	1.71	12.1	196.1	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHM

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-15	Date	10/29/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	45.0 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	4.15	Total Depth (ft-bmp)	62.25	Water Column(ft)	58.1
MP Elevation		Pump Intake (ft-bmp)	60.25	Purge Method	Low-Flow
Sample Time	11:30	Volumes Purged	0.17	Sample ID	SHM-13-15-FAL20
Purge Start	10:50	Gallons Purged	2.44	Replicate/ Code No.	
Purge End	11:40				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:55	0	0	250	4.15	0.00	7.04	0.373	2.4	1.63	11.3	229.8	Clear	Mild
11:00	5	5	250	4.15	0.00	6.88	0.375	2.1	1.47	11.3	230.2	Clear	Mild
11:03	3	8	250	4.15	0.00	6.54	0.386	11.6	0.96	11.2	219.2	Clear	Mild
11:06	3	11	250	4.15	0.00	6.52	0.394	14.45	0.89	11.2	208.7	Clear	Mild
11:09	3	14	250	4.15	0.00	6.52	0.402	14.7	0.84	11.2	187.2	Clear	Mild
11:12	3	17	250	4.15	0.00	6.53	0.407	14.67	0.8	11.2	164.4	Clear	Mild
11:15	3	20	250	4.15	0.00	6.54	0.407	14.37	0.74	11.1	104.2	Clear	Mild
11:18	3	23	250	4.15	0.00	6.55	0.405	14.5	0.72	11.1	63.5	Clear	Mild
11:21	3	26	250	4.15	0.00	6.55	0.4	13.91	0.69	11.1	13.57	Clear	Mild
11:24	3	29	250	4.15	0.00	6.56	0.397	13.75	0.67	11.2	20.7	Clear	Mild
11:27	3	32	250	4.15	0.00	6.56	0.394	12.7	0.67	11.2	14.5	Clear	Mild

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHM	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Stick-up

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-14S	Date	10/29/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	46.9 degrees F and Light Rain and Fog/Mist. The wind is blowing S/SE at 16.9 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	3.8	Total Depth (ft-bmp)	18.8	Water Column(ft)	15
MP Elevation		Pump Intake (ft-bmp)	16.8	Purge Method	Low-Flow
Sample Time	13:50	Volumes Purged	0.47	Sample ID	SHM-13-14S
Purge Start	13:20	Gallons Purged	1.78	Replicate/ Code No.	
Purge End	14:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:23	0	0	250	3.8	0.00	6.71	0.305	36	3	11.2	164	Clear	None
13:26	3	3	250	3.8	0.00	5.91	0.305	15.5	0.95	11.3	173.8	Clear	None
13:29	3	6	250	3.8	0.00	5.89	0.305	13.9	0.89	11.4	172.9	Clear	None
13:32	3	9	250	3.8	0.00	5.86	0.304	10.8	0.83	11.3	169.5	Clear	None
13:35	3	12	250	3.8	0.00	5.84	0.304	10.8	0.79	11.3	166.8	Clear	None
13:38	3	15	250	3.8	0.00	5.84	0.304	10	0.73	11.4	162.3	Clear	None
13:41	3	18	250	3.8	0.00	5.83	0.304	6.8	0.71	11.3	160.4	Clear	None
13:44	3	21	250	3.8	0.00	5.83	0.305	6.4	0.69	11.4	159	Clear	None
13:47	3	24	250	3.8	0.00	5.83	0.305	5.9	0.67	11.4	157.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHM	Well Locked at Arrival: no
Condition of Well: Good condition,Missing lock	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-11	Date	10/29/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	45.0 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	18.9	Total Depth (ft-bmp)	29.7	Water Column(ft)	10.8
MP Elevation		Pump Intake (ft-bmp)	27	Purge Method	Low-Flow
Sample Time		Volumes Purged	1.66	Sample ID	SHL-11-FAL20
Purge Start		Gallons Purged	2.91	Replicate/ Code No.	

Purge End 10:45												Appearance	
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Color	Odor
10:50	0	0	200	18.9	0.00	6.94	0.63	27.06	2.15	10.6	152.3	Black	Medium
10:56	6	6	200	18.91	0.00	6.71	0.536	73.32	0.74	10.7	94.3	Black	Medium
11:01	5	11	200	18.91	0.00	6.64	0.534	883.11	0.63	10.8	74.2	Black	Medium
11:07	6	17	200	18.91	0.00	6.6	0.532	142.11	0.59	10.7	53.9	Black	Medium
11:10	3	20	200	18.91	0.00	6.59	0.532	94.75	0.58	10.7	52.6	Black	Medium
11:16	6	26	200	18.91	0.00	6.56	0.533	113.41	0.56	10.6	44.1	Black	Medium
11:20	4	30	200	18.91	0.00	6.56	0.533	110.87	0.55	10.7	39.6	Black	Medium
11:25	5	35	200	18.91	0.00	6.55	0.533	66.8	0.54	10.6	34.1	Black	Medium
11:30	5	40	200	18.93	0.00	6.54	0.533	35.89	0.53	10.6	29.3	Black	Medium
11:35	5	45	200	18.93	0.00	6.53	0.533	34.13	0.53	10.6	24.7	Black	Medium
11:40	5	50	200	18.93	0.00	6.53	0.534	35.8	0.52	10.6	21.5	Black	Medium

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall , painted orange	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-20	Date	10/29/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	46.0 degrees F and Light Rain and Fog/Mist. The wind is blowing S/SE at 20.9 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	18.8	Total Depth (ft-bmp)	50.25	Water Column(ft)	31.45
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow
Sample Time	14:50	Volumes Purged	0.13	Sample ID	SHL-20-FAL20
Purge Start	14:10	Gallons Purged	2.58	Replicate/ Code No.	

Purge End													Appearance	
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)		Color	Odor
14:15	0	0	250	18.8	0.00	6.47	0.516	12.9	3.33	10.5	36.5		Clear	None
14:20	5	5	250	18.8	0.00	6.46	0.516	11.49	3.38	10.5	30.1		Clear	None
14:25	5	10	250	18.8	0.00	6.46	0.515	10.91	3.26	10.5	26.2		Clear	None
14:30	5	15	250	18.8	0.00	6.46	0.513	11.48	3.25	10.6	23.1		Clear	None
14:35	5	20	250	18.8	0.00	6.45	0.513	11.2	3.05	10.5	20.7		Clear	None
14:40	5	25	250	18.8	0.00	6.45	0.514	10.89	3.37	10.4	18.9		Clear	None
14:45	5	30	250	18.8	0.00	6.45	0.513	10.7	3.37	10.4	17.1		Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: NA	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Project Number 30048392 Well ID EPA-PZ-2012-4B Date 10/29/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		45.0 degrees F and Rain and Fog/Mist. The wind is blowing NE at 16.9 mph.	
Measuring Pt. Description		Top of Inner Casing		Screen Setting (ft-bmp)		--	
				Casing Diameter (in)		1	
				Well Casing Material		PVC	
Static Water Level (ft-bmp)		16.18		Total Depth (ft-bmp)		77	
				Water Column(ft)		60.82	
				Gallons in Well		2.47	
MP Elevation				Pump Intake (ft-bmp)		72.5	
				Purge Method		Low-Flow	
				Sample Method		Low-Flow	
Sample Time		16:30		Volumes Purged		0.75	
				Sample ID		EPA-PZ-04B-FAL20	
				Sampled by			
Purge Start		15:45		Gallons Purged		1.85	
				Replicate/ Code No.		SHL-DUP05-FAL20	
Purge End		16:50					

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:55	0	0	150	16.38	0.00	6.52	0.403	37.95	6.17	10.2	26	Brown	None
16:00	5	5	150	16.18	0.00	6.5	0.432	37.22	4.33	10.1	22.3	Brown	None
16:06	6	11	150	16.18	0.00	6.47	0.442	36.37	4.06	9.8	18.6	Brown	None
16:10	4	15	150	16.18	0.00	6.46	0.456	33.44	3.33	9.4	14.8	Brown	None
16:16	6	21	150	16.18	0.00	6.46	0.458	34.83	3.43	9.3	14.5	Brown	None
16:20	4	25	150	16.18	0.00	6.46	0.457	34.1	3.59	9.2	12.2	Brown	None
16:25	5	30	150	16.18	0.00	6.46	0.468	33.25	3.51	9.1	5.4	Brown	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Next to system fence gate	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: EPA Key

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-03	Date	10/29/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	46 °F, Overcast, N winds at 1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	5.5	Total Depth (ft-bmp)	14.33	Water Column(ft)	8.83
Gallons in Well	1.43				
MP Elevation		Pump Intake (ft-bmp)	10	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	12:30	Volumes Purged		Sample ID	SHM-13-03-FAL20
Sampled by	Connor Rosenbaum				
Purge Start	11:44	Gallons Purged		Replicate/ Code No.	
Purge End	12:45				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:44	0	0	250	5.56	0.00	4.91	0.252	13.5	1.54	10.4	111	Clear	None
11:47	3	3	250	5.6	0.00	4.84	0.255	7.39	1.44	10.5	103	Clear	None
11:50	3	6	250	5.56	0.00	4.81	0.261	6.15	1.4	10.5	94	Clear	None
11:53	3	9	250	5.56	0.00	4.8	0.268	6.07	1.3	11	77	Clear	None
11:57	4	13	250	5.56	0.00	4.82	0.281	4.8	1.27	11	55.2	Clear	None
12:00	3	16	250	5.56	0.00	4.84	0.284	5.3	1.27	10.8	52.9	Clear	None
12:03	3	19	250	5.56	0.00	4.85	0.282	4.03	1.28	10.7	47.3	Clear	None
12:06	3	22	250	5.56	0.00	4.86	0.297	4.36	1.2	10.9	33.6	Clear	None
12:10	4	26	250	5.56	0.00	4.89	0.3	5.5	1.2	10.9	26.8	Clear	None
12:13	3	29	250	5.56	0.00	4.9	0.308	5.7	1.2	10.8	21.2	Clear	None
12:15	2	31	250	5.56	0.00	4.92	0.313	5.5	1.17	10.8	15.9	Clear	None
12:19	4	35	250	5.56	0.00	4.93	0.315	5.6	1.15	10.8	14.4	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Needs repairs _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-14D-FAL20	Date	10/29/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	46 °F, Overcast, N winds at 1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	3.76	Total Depth (ft-bmp)	57.5	Water Column(ft)	53.74
Gallons in Well	8.73				
MP Elevation		Pump Intake (ft-bmp)	54	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	13:50	Volumes Purged		Sample ID	SHM-13-14D-FAL20
Sampled by	Connor Rosenbaum				
Purge Start	13:24	Gallons Purged		Replicate/ Code No.	
Purge End	14:10				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:24	0	0	250	3.76	0.00	5.88	0.405	70	4.17	11.4	64	Clear	None
13:28	4	4	250	3.76	0.00	5.79	0.408	70.5	3.74	11.4	70	Clear	None
13:32	4	8	250	3.76	0.00	5.73	0.409	70.5	3.62	11.2	74.9	Clear	None
13:35	3	11	250	3.76	0.00	5.67	0.407	65.8	4.16	11.3	78.9	Clear	None
13:38	3	14	250	3.76	0.00	5.68	0.407	21.6	4.27	11.3	81	Clear	None
13:41	3	17	250	3.76	0.00	5.66	0.408	20.4	3.91	11.2	84.9	Clear	None
13:44	3	20	250	3.76	0.00	5.62	0.41	18.5	3.7	11.1	89.1	Clear	None
13:47	3	23	250	3.76	0.00	5.6	0.41	14.7	3.62	11.1	91.1	Clear	None
13:50	3	26	250	3.76	0.00	5.58	0.41	14.5	3.61	11	92.6	Clear	None
13:53	3	29	250	3.76	0.00	5.57	0.409	14.3	3.62	10.9	94.3	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition,Missing lock	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EW-01	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	33.1 degrees F and Light Snow and Fog/Mist. The wind is blowing N at 20.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	6
Static Water Level (ft-bmp)	0	Total Depth (ft-bmp)	85	Water Column(ft)	85
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Volumetric
Sample Time	08:10	Volumes Purged		Sample ID	EW-01-FAL20
Purge Start	08:10	Gallons Purged		Replicate/ Code No.	
Purge End	08:17				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:29	0	0	150		0.00	6.5	0.505	4.23	1.05	9.9	96.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well:	Well Locked at Departure: no
Well Completion: NA	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EW-04	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	33.1 degrees F and Light Snow and Fog/Mist. The wind is blowing N at 20.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	6
Static Water Level (ft-bmp)	0	Total Depth (ft-bmp)	95	Water Column(ft)	95
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Volumetric
Sample Time	08:00	Volumes Purged		Sample ID	EW-04-FAL20
Purge Start	08:00	Gallons Purged		Replicate/ Code No.	
Purge End					

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:37	0	0	150	0	0.00	6.76	0.264	6.18	2.11	6.7	74.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well:	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	EPA-PZ-2012-1A	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	32.0 degrees F and Snow and Fog. The wind is blowing N/NE at 45.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	12.31	Total Depth (ft-bmp)	28	Water Column(ft)	15.69
MP Elevation		Pump Intake (ft-bmp)	25	Purge Method	Low-Flow
Sample Time	10:05	Volumes Purged	2.89	Sample ID	EPA-PZ-2012-01A-FAL20
Purge Start	09:20	Gallons Purged	1.85	Replicate/ Code No.	
Sample Method		Well Casing Material	PVC	Gallons in Well	0.64
		Sample Method	Low-Flow	Sampled by	Diane Champagne

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:26	0	0	150	12.31	0.00	7.07	0.086	72.57	2.13	6.6	70.1	Brown	None
09:30	4	4	150	12.44	0.00	6.73	0.087	26.62	1.61	6.8	79.5	Brown	None
09:35	5	9	150	12.54	0.00	6.52	0.084	28.61	1.59	7.1	89.4	Brown	None
09:40	5	14	150	12.6	0.00	6.53	0.084	29.68	1.3	7.1	89.5	Brown	None
09:45	5	19	150	12.6	0.00	6.55	0.082	27.5	0.97	7.2	89.3	Brown	None
09:52	7	26	150	12.71	0.00	6.56	0.082	36.87	0.83	7.3	89.2	Brown	None
09:56	4	30	150	12.71	0.00	6.58	0.081	37.36	0.8	7.2	89.1	Brown	None
10:00	4	34	150	12.71	0.00	6.59	0.081	37.23	0.78	7.2	88.8	Brown	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: In the woods behind the dumpster	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: EPA key

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-1B	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	30.9 degrees F and Heavy Snow and Fog. The wind is blowing N at 25.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	12.11	Total Depth (ft-bmp)	78.56	Water Column(ft)	66.45
MP Elevation		Pump Intake (ft-bmp)	76	Purge Method	Low-Flow
Sample Time	11:10	Volumes Purged	0.68	Sample ID	EPA-PZ-2012-1B
Purge Start	10:25	Gallons Purged	1.85	Replicate/ Code No.	
Purge End	11:47				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:35	0	0	150	12.12	0.00	6.34	0.421	7.11	1.04	6.3	82.3	Clear	None
10:41	6	6	150	12.12	0.00	6.31	0.43	7.03	0.91	6.4	80.4	Clear	None
10:45	4	10	150	12.12	0.00	6.32	0.43	7.42	0.83	6.5	79.4	Clear	None
10:50	5	15	150	12.12	0.00	6.34	0.43	8.76	0.93	6.6	75.8	Clear	None
10:56	6	21	150	12.12	0.00	6.36	0.431	8.85	0.93	6.6	75.2	Clear	None
11:01	5	26	150	12.12	0.00	6.37	0.431	9.01	0.92	6.7	73.7	Clear	None
11:05	4	30	150	12.12	0.00	6.38	0.431	8.77	0.89	6.7	72.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods behind dumpster	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: EPA well

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-14	Date	10/30/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	33.1 degrees F and Light Snow and Fog/Mist. The wind is blowing N at 20.9 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	21.15	Total Depth (ft-bmp)	82.2	Water Column(ft)	61.05
MP Elevation		Pump Intake (ft-bmp)	79.2	Purge Method	Low-Flow
Sample Time	11:10	Volumes Purged	6.52	Sample ID	SHM-10-14-FAL20
Purge Start	09:35	Gallons Purged	101.12	Replicate/ Code No.	
Purge End	11:20				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:57	0	0	250	21.15	0.00	6.41	0.252	45	2.19	8.3	-56	Clear	None
10:00	3	3	250	21.15	0.00	6.38	0.251	42	2.01	8	-56.1	Clear	None
10:05	5	8	250	21.2	0.00	6.33	0.247	45	1.65	7.8	-58	Clear	None
10:10	5	13	250	21.2	0.00	6.3	0.246	32.5	1.4	7.8	-60.4	Clear	None
10:15	5	18	250	21.2	0.00	6.29	0.249	30	1.27	7.8	-61.7	Clear	None
10:20	5	23	250	21.2	0.00	6.28	0.252	21.5	1.14	8	-63.3	Clear	None
10:25	5	28	250	21.2	0.00	6.28	0.253	15	1.03	7.9	-64.9	Clear	None
10:30	5	33	250	21.2	0.00	6.28	0.251	12.5	0.98	7.4	-65.7	Clear	None
10:35	5	38	250	21.2	0.00	6.28	0.245	12.7	0.98	6.6	-66.5	Clear	None
10:40	5	43	250	21.2	0.00	6.28	0.239	23.5	1.04	6	-66.5	Clear	None
10:45	5	48	250	21.2	0.00	6.27	0.24	21.7	1.01	6.1	-66.2	Clear	None
10:50	5	53	250	21.2	0.00	6.27	0.239	15.5	0.98	5.8	-66.3	Clear	None
10:53	3	56	250	21.2	0.00	6.27	0.239	15	0.95	5.9	-66.4	Clear	None
10:56	3	59	250	21.2	0.00	6.27	0.24	13.8	0.94	6	-66.5	Clear	None
10:59	3	62	250	21.2	0.00	6.27	0.242	11.5	0.92	6.2	-66.8	Clear	None
10:02	1383	5	250	21.2	0.00	6.27	0.242	10.9	0.92	6.3	-67.1	Clear	None
11:06	64	69	250	21.2	0.00	6.28	0.244	10.7	0.93	6.3	-67.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	SHM	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-4A	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	30.0 degrees F and Snow and Fog. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	16.11	Total Depth (ft-bmp)	24.56	Water Column(ft)	8.45
MP Elevation		Pump Intake (ft-bmp)	22	Purge Method	Low-Flow
Sample Time	13:55	Volumes Purged	11.85	Sample ID	EPA-PZ-2012-4A-FAL20
Purge Start	12:15	Gallons Purged	4.03	Replicate/ Code No.	
Sampled by	Diane Champagne				

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:25	0	0	150	16.22	0.00	6.57	0.291	31.73	4.12	6.2	46.3	Clear	None
12:30	5	5	150	16.3	0.00	6.5	0.294	28.2	7.97	6.4	40	Clear	None
12:35	5	10	150	16.31	0.00	6.49	0.294	26.24	7.56	6.4	35.9	Clear	None
12:40	5	15	150	16.31	0.00	6.48	0.294	25.03	7.36	6.2	32.9	Clear	None
12:45	5	20	150	16.3	0.00	6.48	0.293	25.75	7.09	6.6	29.7	Clear	None
12:50	5	25	150	16.3	1.39	6.48	0.292	16.08	6.82	6.5	28.2	Clear	None
12:56	6	31	150	16.3	0.00	6.47	0.29	17.33	6.2	6.7	25.6	Clear	None
13:00	4	35	150	16.31	0.00	6.47	0.29	14.1	5.87	6.8	24.1	Clear	None
13:06	6	41	150	16.31	0.00	6.47	0.291	17.96	5.32	7	21.7	Clear	None
13:10	4	45	150	16.31	0.00	6.47	0.289	19.11	4.78	7	19.1	Clear	None
13:16	6	51	150	16.31	0.00	6.47	0.288	16.2	4.58	7.2	18.2	Clear	None
13:25	9	60	150	16.31	0.00	6.47	0.284	15.69	4.06	7	15.4	Clear	None
13:31	6	66	150	16.31	0.00	6.47	0.287	10.79	3.71	7.1	13.7	Clear	None
13:36	5	71	150	16.31	0.00	6.47	0.285	10.17	3.44	7.2	12.3	Clear	None
13:40	4	75	150	16.31	3.37	6.47	0.284	10.36	3.25	7.4	11.1	Clear	None
13:45	5	80	150	16.31	0.00	6.47	0.283	10.77	3.08	7.3	10.1	Clear	None
13:50	5	85	150	16.3	4.03	6.47	0.282	10.24	2.95	7.3	9.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Next to system fence	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: EPA lock

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-13	Date	10/30/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	30.9 degrees F and Light Snow and Fog/Mist. The wind is blowing N at 41.1 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	26.75	Total Depth (ft-bmp)	73.05	Water Column(ft)	46.3
MP Elevation		Pump Intake (ft-bmp)	70.02	Purge Method	Low-Flow
Sample Time	14:00	Volumes Purged	0.42	Sample ID	SHM-10-13-FAL20
Purge Start	12:42	Gallons Purged	4.95	Replicate/ Code No.	
Purge End	14:10				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:00	0	0	250	26.75	0.00	6.99	0.246	53	3.67	8.5	8	Clear	None
13:05	5	5	250	26.75	0.00	6.7	0.248	35	2.41	8.6	19.2	Clear	None
13:10	5	10	250	26.75	0.00	6.57	0.25	34	1.52	8.6	12.1	Clear	None
13:15	5	15	250	26.75	0.00	6.55	0.249	28	1.43	8.3	6.7	Clear	None
13:20	5	20	250	26.75	0.00	6.53	0.229	38	1.45	5.8	3.3	Clear	None
13:25	5	25	250	26.75	0.00	6.5	0.251	35.4	1	7.9	-2.1	Clear	None
13:30	5	30	250	26.75	0.00	6.44	0.267	32	0.82	8.4	-16.1	Clear	None
13:35	5	35	250	26.75	0.00	6.4	0.279	27.5	0.78	8.2	-26.9	Clear	None
13:38	3	38	250	26.8	0.00	6.38	0.292	25.2	0.75	8.4	-34.2	Clear	None
13:41	3	41	250	26.8	0.00	6.37	0.308	16.8	0.73	8.4	-41.8	Clear	None
13:44	3	44	250	26.8	0.00	6.36	0.314	16.3	0.72	8.2	-46.8	Clear	None
13:47	3	47	250	26.8	0.00	6.35	0.324	16.6	0.71	8.3	-53.1	Clear	None
13:50	3	50	250	26.8	0.00	6.35	0.327	13.7	0.7	8.1	-57.5	Clear	None
13:54	4	54	250	26.8	0.00	6.35	0.33	13.2	0.7	8.1	-60.7	Clear	None
13:57	3	57	250	26.8	0.00	6.35	0.332	12.4	0.68	8.2	-64.6	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	SHM	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	N5-P1	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	30.0 degrees F and Light Snow and Fog/Mist. The wind is blowing N/NW at 25.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	24.7	Total Depth (ft-bmp)	100.8	Water Column(ft)	76.1
MP Elevation		Pump Intake (ft-bmp)	27.7	Purge Method	Low-Flow
Sample Time	15:00	Volumes Purged	0.73	Sample ID	N5-P1-FAL20
Purge Start	14:25	Gallons Purged	2.25	Replicate/ Code No.	
Purge End	15:10				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:35	0	0	250	24.7	0.00	6.64	0.171	5.8	2.14	8.4	-32.7	Clear	None
14:38	3	3	250	24.75	0.00	6.66	0.172	4.85	1.47	8.8	-32.9	Clear	None
14:41	3	6	250	24.8	0.00	6.68	0.172	4.9	1.08	8.9	-33.2	Clear	None
14:44	3	9	250	24.85	0.00	6.69	0.172	4.8	0.98	8.8	-33.5	Clear	None
14:47	3	12	250	24.9	0.00	6.71	0.172	5.25	0.85	8.9	-34.4	Clear	None
14:50	3	15	250	24.95	0.00	6.73	0.172	5.8	0.79	9	-35.1	Clear	None
14:53	3	18	250	24.95	0.00	6.75	0.171	6.1	0.73	8.9	-36.3	Clear	None
14:56	3	21	250	24.95	0.00	6.76	0.172	5.85	0.71	9.1	-37.1	Clear	None
14:59	3	24	250	24.95	0.00	6.78	0.171	6	0.68	9.1	-38.3	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHM	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-06	Date	10/30/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	32.0 degrees F and Light Snow and Fog/Mist. The wind is blowing undefined at 0.0 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5
Static Water Level (ft-bmp)	20.44	Total Depth (ft-bmp)	81	Water Column(ft)	60.56
MP Elevation		Pump Intake (ft-bmp)	76	Purge Method	Low-Flow
Sample Time	15:40	Volumes Purged	0.58	Sample ID	SHM-10-06-FAL20
Purge Start	14:35	Gallons Purged	3.24	Replicate/ Code No.	
Well Casing Material	PVC	Gallons in Well	5.54	Sample Method	Low-Flow
				Sampled by	Diane Champagne

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:40	0	0	200	20.44	0.00	6.42	0.477	13.19	3.11	7.3	20.3	Yellow	None
14:45	5	5	200	20.5	0.00	6.4	0.477	14.16	1.24	7.8	16.9	Yellow	None
14:50	5	10	200	20.51	0.00	6.4	0.484	16.74	0.98	8	14.3	Yellow	None
14:56	6	16	200	20.51	0.00	6.42	0.483	37.56	0.96	8	9.6	Yellow	None
15:01	5	21	200	20.51	0.00	6.44	0.483	34.88	0.89	7.9	6.8	Yellow	None
15:05	4	25	200	20.51	0.00	6.45	0.483	31.97	0.92	8.1	4.6	Yellow	None
15:10	5	30	200	20.51	0.00	6.46	0.481	42.15	0.69	8.1	1.5	Yellow	None
15:15	5	35	200	20.51	1.92	6.47	0.481	28.71	0.74	8.3	-1.1	Yellow	None
15:20	5	40	200	20.51	0.00	6.48	0.479	27.11	0.75	8.4	-5.1	Yellow	None
15:25	5	45	200	20.51	0.00	6.49	0.479	26.51	0.76	8.3	-10.3	Yellow	None
15:35	10	55	200	20.51	0.00	6.5	0.479	28.3	0.77	8.3	-10.6	Yellow	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: Odd SHL lock, replaced with a 2006
lock

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHM-99-31B Date 10/30/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		28 °F, Snow, W winds at 11 mph.	
Measuring Pt. Description		Top of Inner Casing		Screen Setting (ft-bmp)		--	
				Casing Diameter (in)		2	
Well Casing Material		PVC					
Static Water Level (ft-bmp)		4.7		Total Depth (ft-bmp)		61.3	
				Water Column(ft)		56.6	
Gallons in Well		9.2					
MP Elevation				Pump Intake (ft-bmp)		58	
				Purge Method		Low-Flow	
Sample Method		Low-Flow					
Sample Time		14:00		Volumes Purged			
				Sample ID		SHM-99-31B-FAL20	
Sampled by		Connor Rosenbaum					
Purge Start		13:19		Gallons Purged			
				Replicate/ Code No.			
Purge End		14:10					

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:19	0	0	250	4.75	0.00	7.11	0.079	4.8	7.79	6.5	52	Clear	None
13:22	3	3	250	4.75	0.00	6.96	0.076	5.2	7.34	5.9	65	Clear	None
13:25	3	6	250	4.75	0.00	6.87	0.077	4.3	7.06	6.3	75.9	Clear	None
13:28	3	9	250	4.75	0.00	6.82	0.076	5.2	6.91	6.1	-84.2	Clear	None
13:31	3	12	250	4.75	0.00	6.78	0.077	5.6	6.81	6.8	-89.6	Clear	None
13:35	4	16	250	4.75	0.00	6.79	0.078	4.3	6.67	6.9	93.4	Clear	None
13:38	3	19	250	4.75	0.00	6.78	0.078	5.5	6.54	6.9	97	Clear	None
13:41	3	22	250	4.75	0.00	6.78	0.077	5	6.48	6.8	97.5	Clear	None
13:44	3	25	250	4.75	0.00	6.78	0.077	5.3	6.46	6.7	97.6	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: In creek bed edge	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-99-31C	Date	10/30/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	28 °F, Snow, W winds at 8 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	5.03	Total Depth (ft-bmp)	79.85	Water Column(ft)	74.82
Gallons in Well	12.16				
MP Elevation		Pump Intake (ft-bmp)	75	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	15:30	Volumes Purged		Sample ID	SHM-99-31C-FAL20
Sampled by	Connor Rosenbaum				
Purge Start	14:51	Gallons Purged		Replicate/ Code No.	
Purge End	15:45				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:58	0	0	250	5.06	0.00	6.76	0.291	6.1	2.2	5.6	-14.6	Clear	None
15:01	3	3	250	5.06	0.00	6.63	0.301	4.6	1.57	6.2	-22.8	Clear	None
15:04	3	6	250	5.06	0.00	6.61	0.307	5.4	1.36	6.6	-27.8	Clear	None
15:07	3	9	250	5.06	0.00	6.61	0.307	4.8	1.23	6.8	-31.9	Clear	None
15:10	3	12	250	5.06	0.00	6.61	0.31	4.8	1.16	6.9	-34.3	Clear	None
15:13	3	15	250	5.06	0.00	6.61	0.309	5.1	1.11	6.7	-36.2	Clear	None
15:16	3	18	250	5.06	0.00	6.61	0.308	4.6	1.1	6.7	-37.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-99-32X	Date	10/30/2020		
Project Name/Location	Devens, Massachusetts	Weather(°F)	31 °F, Snow, N winds at 11 mph.				
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	10.67	Total Depth (ft-bmp)	48	Water Column(ft)	37.33	Gallons in Well	6.07
MP Elevation		Pump Intake (ft-bmp)	44	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	12:20	Volumes Purged		Sample ID	SHM-99-32X-FAL20	Sampled by	Connor Rosenbaum
Purge Start	11:26	Gallons Purged		Replicate/ Code No.			
Purge End	12:31						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:30	0	0	250	10.7	0.00	7.82	0.244	23.9	3.6	8.9	22.5	Clear	None
11:34	4	4	250	10.7	0.00	7.27	0.248	20.9	1.94	8.8	5.5	Clear	None
11:37	3	7	250	10.7	0.00	7.08	0.247	19.7	1.53	8.7	-4.1	Clear	None
11:41	4	11	250	10.7	0.00	6.9	0.248	19.4	1.25	8.9	-13.2	Clear	None
11:45	4	15	250	10.7	0.00	6.79	0.247	19.7	1.16	8.9	-20.4	Clear	None
11:51	6	21	250	10.7	0.00	6.71	0.245	17.2	1.07	9.1	-28.4	Clear	None
11:54	3	24	250	10.7	0.00	6.68	0.243	15.2	1.04	8.9	-31.2	Clear	None
11:57	3	27	250	10.7	0.00	6.66	0.243	12.4	1.03	9	-32.9	Clear	None
12:00	3	30	250	10.7	0.00	6.65	0.241	11.5	1.04	8.8	-34.8	Clear	None
12:04	4	34	250	10.7	0.00	6.63	0.241	11.4	1.06	8.8	-36.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-99-29X	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	36.0 degrees F and Clear. The wind is blowing W/NW at 37.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	24.8	Total Depth (ft-bmp)	30.9	Water Column(ft)	6.1
MP Elevation		Pump Intake (ft-bmp)	27.8	Purge Method	Low-Flow
Sample Time	10:55	Volumes Purged	5.03	Sample ID	SHP-99-29X-FAL20
Purge Start	08:53	Gallons Purged	7.79	Replicate/ Code No.	
Purge End	11:10				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:20	0	0	250	24.8	0.00	5.97	0.137	198	2.62	9.3	-5.5	Clear	None
09:23	3	3	250	24.85	0.00	5.94	0.133	200	2.08	8.9	-2.3	Clear	None
09:26	3	6	250	24.85	0.00	5.92	0.131	199	2	8.7	-2.1	Clear	None
09:30	4	10	250	24.85	0.00	5.91	0.127	201	1.92	8.2	-1.7	Clear	None
09:35	5	15	250	24.85	0.00	5.92	0.123	201	1.84	7.8	-1.8	Clear	None
09:40	5	20	250	24.8	0.00	5.93	0.122	157	1.86	7.9	-2.5	Clear	None
09:45	5	25	250	24.8	0.00	5.96	0.125	157	1.86	8.9	-5.1	Clear	None
09:50	5	30	250	24.8	0.00	5.98	0.128	156	1.88	9.6	-6.6	Clear	None
09:55	5	35	250	24.8	0.00	5.98	0.128	159	1.88	9.5	-7.6	Clear	None
10:00	5	40	250	24.8	0.00	5.97	0.125	125	1.89	9.1	-7	Clear	None
10:05	5	45	250	24.8	0.00	5.97	0.124	118	1.86	8.8	-6	Clear	None
10:10	5	50	250	24.8	0.00	5.96	0.121	118	1.83	8.1	-4.6	Clear	None
10:15	5	55	250	24.8	0.00	5.96	0.12	101	1.76	8.1	-4	Clear	None
10:18	3	58	250	24.8	0.00	5.96	0.121	100.8	1.74	8.4	-3.8	Clear	None
10:21	3	61	250	24.8	0.00	5.96	0.123	101	1.73	9	-4	Clear	None
10:25	4	65	250	24.8	0.00	5.95	0.125	120	1.75	9.4	-4	Clear	None
10:30	5	70	250	24.8	0.00	5.95	0.125	80	1.64	9.3	-3.9	Clear	None
10:35	5	75	250	24.8	0.00	5.94	0.123	79.5	1.6	8.8	-3	Clear	None
10:38	3	78	250	24.8	0.00	5.94	0.121	78.5	1.6	8.3	-2.4	Clear	None
10:41	3	81	250	24.8	0.00	5.94	0.119	76.5	1.6	8	-1.4	Clear	None
10:45	4	85	250	24.8	0.00	5.93	0.118	69.4	1.53	7.9	-0.5	Clear	None
10:48	3	88	250	24.8	0.00	5.92	0.117	68.9	1.53	7.7	0.4	Clear	None
10:51	3	91	250	24.8	0.00	5.92	0.118	67.9	1.5	7.9	0.2	Clear	None

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHP	Well Locked at Arrival: no
Condition of Well: Good condition,Missing lock	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHM-10-15	Date	11/02/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	37.9 degrees F and Mostly Cloudy. The wind is blowing undefined at 0.0 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	25.25	Total Depth (ft-bmp)	56.7	Water Column(ft)	31.45
MP Elevation		Pump Intake (ft-bmp)	53.7	Purge Method	Low-Flow
Sample Time	13:15	Volumes Purged	0.45	Sample ID	SHM-10-15-FAL20
Purge Start	12:15	Gallons Purged	3.57	Replicate/ Code No.	
Purge End	13:30				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:30	0	0	250	25.25	0.00	6.44	0.206	8.3	1.83	10.5	15.3	Clear	None
12:33	3	3	250	25.25	0.00	6.31	0.225	6.4	1.31	10.2	4	Clear	None
12:36	3	6	250	25.25	0.00	6.33	0.222	6.7	1.17	9.1	-9.3	Clear	None
12:39	3	9	250	25.25	0.00	6.34	0.225	7.2	1.06	9.4	-18.3	Clear	None
12:42	3	12	250	25.25	0.00	6.35	0.233	7.7	0.96	9.6	-26.3	Clear	None
12:45	3	15	250	25.25	0.00	6.35	0.233	8.6	0.93	9.5	-30.7	Clear	None
12:48	3	18	250	25.25	0.00	6.34	0.231	9.5	0.91	9.3	-34.5	Clear	None
12:51	3	21	250	25.25	0.00	6.34	0.231	14.5	0.91	9.2	-35.9	Clear	None
12:54	3	24	250	25.25	0.00	6.34	0.231	14.6	0.88	9.4	-38	Clear	None
12:57	3	27	250	25.25	0.00	6.34	0.235	14.8	0.85	9.8	-40.6	Clear	None
13:00	3	30	250	25.25	0.00	6.34	0.236	14.7	0.87	9.7	-41.9	Clear	None
13:03	3	33	250	25.25	0.00	6.34	0.234	19.3	0.85	8.8	-42.6	Clear	None
13:06	3	36	250	25.25	0.00	6.34	0.228	19.5	0.86	8.8	-43.3	Clear	None
13:09	3	39	250	25.25	0.00	6.34	0.228	19.5	0.85	8.8	-43.6	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Information

Well Location:	SHM	Well Locked at Arrival:	no
Condition of Well:	Good condition,Missing lock	Well Locked at Departure:	no
Well Completion:	Stick-up	Key Number To Well:	NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHL-15 Date 11/02/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		39.0 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	5	Well Casing Material	PVC
Static Water Level (ft-bmp)	21.15	Total Depth (ft-bmp)	26.6	Water Column(ft)	5.45	Gallons in Well	5.53
MP Elevation		Pump Intake (ft-bmp)	23.6	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time		Volumes Purged	0.31	Sample ID	SHL-15-FAL20	Sampled by	Nicholas Burch
Purge Start	13:40	Gallons Purged	1.72	Replicate/ Code No.			
Purge End	14:25						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:48	0	0	250	21.25	0.00	6.03	0.158	20.5	1.87	10.4	5	Clear	None
13:51	3	3	250	21.25	0.00	5.99	0.159	13.5	1.11	10.2	5.5	Clear	None
13:54	3	6	250	21.25	0.00	5.98	0.159	13.4	0.9	10.4	3.6	Clear	None
13:57	3	9	250	21.25	0.00	5.97	0.16	13.4	0.81	10.5	2.4	Clear	None
14:00	3	12	250	21.25	0.00	5.96	0.16	13.3	0.74	10.5	1.2	Clear	None
14:03	3	15	250	21.25	0.00	5.95	0.159	13.1	0.71	10.4	0	Clear	None
14:06	3	18	250	21.25	0.00	5.95	0.161	12.1	0.69	10.7	-1.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-12	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	37.0 degrees F and Cloudy. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	23.3	Total Depth (ft-bmp)	28.75	Water Column(ft)	5.45
MP Elevation		Pump Intake (ft-bmp)	26.75	Purge Method	Low-Flow
Sample Time	15:45	Volumes Purged	2.63	Sample ID	SHL-12-FAL20
Purge Start	14:50	Gallons Purged	3.63	Replicate/ Code No.	
Purge End	16:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:00	0	0	250	23.3	0.00	6.39	0.381	71.5	4	8.9	14.2	Clear	None
15:03	3	3	250	23.3	0.00	6.44	0.385	37.5	2.36	8.8	14.3	Clear	None
15:06	3	6	250	23.3	0.00	6.44	0.379	37.6	2.11	8.9	14.7	Clear	None
15:09	3	9	250	23.3	0.00	6.38	0.359	14.5	1.56	8.9	19.3	Clear	None
15:12	3	12	250	23.3	0.00	6.31	0.341	14	1.35	8.9	24.6	Clear	None
15:15	3	15	250	23.3	0.00	6.27	0.328	9.4	1.28	9.1	29.3	Clear	None
15:18	3	18	250	23.3	0.00	6.23	0.314	9.2	1.25	8.8	34	Clear	None
15:21	3	21	250	23.3	0.00	6.2	0.298	9.5	1.33	8.8	38.9	Clear	None
15:24	3	24	250	23.3	0.00	6.18	0.285	8.7	1.61	8.7	43.6	Clear	None
15:27	3	27	250	23.3	0.00	6.16	0.274	8.8	1.8	8.7	47	Clear	None
15:30	3	30	250	23.3	0.00	6.14	0.267	8.6	1.99	8.8	50.8	Clear	None
15:33	3	33	250	23.3	0.00	6.12	0.26	8.3	2.3	8.7	55.1	Clear	None
15:36	3	36	250	23.3	0.00	6.09	0.256	7.8	2.56	8.8	59.7	Clear	None
15:39	3	39	250	23.3	0.00	6.08	0.252	7.3	2.76	8.7	64.8	Clear	None
15:42	3	42	250	23.3	0.00	6.07	0.252	6.8	2.88	8.6	67.5	Clear	None
15:45	3	45	250	23.3	0.00	6.05	0.247	6.3	2.96	8.5	71.3	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-11-06	Date	11/02/2020		
Project Name/Location	Devens, Massachusetts	Weather(°F)	37.9 degrees F and Clear. The wind is blowing W at 49.9 mph.				
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	20.88	Total Depth (ft-bmp)	35	Water Column(ft)	14.12	Gallons in Well	2.29
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:35	Volumes Purged	0.81	Sample ID	SHM-11-06-FAL20	Sampled by	Diane Champagne
Purge Start	08:50	Gallons Purged	1.85	Replicate/ Code No.	SHL-DUP03-FAL20		

Purge End													Appearance	
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)		Color	Odor
09:00	0	0	200	20.88	0.00	7.36	0.54	18.14	0.76	9.4	67.9		Clear	None
09:05	5	5	200	20.9	0.00	7.3	0.533	24.53	0.57	9.3	56.4		Clear	None
09:10	5	10	200	20.91	0.00	7.3	0.534	27.47	0.55	9.2	55.9		Clear	None
09:15	5	15	200	20.92	0.00	7.24	0.531	12.48	0.5	9.2	48.9		Clear	None
09:21	6	21	200	20.92	0.00	7.22	0.531	10.79	0.48	9.2	47.1		Clear	None
09:27	6	27	200	20.92	0.00	7.18	0.531	10.85	0.46	9.2	43.3		Clear	None
09:30	3	30	200	20.92	0.00	7.16	0.533	10.41	0.46	9.2	41.3		Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	2	HNO3
Alkalinity	250 mL Plastic	2	None
Chloride,Sulfate	125 mL Plastic	2	None
Dissolved Organic Carbon	250 mL Amber	2	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-01	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39.0 degrees F and Partly Cloudy. The wind is blowing W at 54.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	21.08	Total Depth (ft-bmp)	34	Water Column(ft)	12.92
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow
Sample Time	11:15	Volumes Purged	1.95	Sample ID	PZ-12-01-FAL20
Purge Start	10:10	Gallons Purged	4.10	Replicate/ Code No.	
Sampled by	Diane Champagne				

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:15	0	0	200	21.08	0.00	7.15	0.513	102.93	1.95	9	33.1	Orange	Mild
10:20	5	5	200	21.08	0.00	7.03	0.526	47.63	1.64	9.5	30.9	Orange	Mild
10:25	5	10	250	21.08	0.00	6.99	0.526	45.97	1.32		28.5	Orange	Mild
10:30	5	15	250	21.08	0.00	6.95	0.523	31.22	1.18	9	26.7	Orange	Mild
10:35	5	20	250	21.08	0.00	6.93	0.524	14.67	1.04	9	24.5	Orange	Mild
10:40	5	25	250	21.08	0.00	6.91	0.525	12.37	0.92	9.3	22.1	Orange	Mild
10:45	5	30	250	21.08	0.00	6.89	0.524	17.75	0.99	9.1	20.4	Orange	Mild
10:50	5	35	250	21.08	0.00	6.87	0.525	17.79	0.81	9.3	18.5	Orange	Mild
10:55	5	40	250	21.08	0.00	6.85	0.626	13.8	0.71	9.2	14.1	Orange	Mild
11:00	5	45	250	21.08	0.00	6.85	0.526	12.44	0.69	9.2	13.4	Orange	Mild
11:06	6	51	250	21.08	0.00	6.83	0.525	11.75	0.66	9	12.1	Orange	Mild
11:10	4	55	250	21.08	0.00	6.81	0.527	11.71	0.63	9.2	10.7	Orange	Mild

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Condition of Well: Good condition

Well Locked at Departure: yes

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID PZ-12-02 Date 11/02/2020

Project Name/Location	Devens, Massachusetts		Weather(°F)	39.0 degrees F and Mostly Cloudy. The wind is blowing undefined at 15			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	20.97	Total Depth (ft-bmp)	34	Water Column(ft)	13.03	Gallons in Well	2.12
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	13:00	Volumes Purged	3.51	Sample ID	PZ-12-02-FAL20	Sampled by	Diane Champagne
Purge Start	11:30	Gallons Purged	7.45	Replicate/ Code No.			
Purge End	13:06						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:35	0	0	320	21.01	0.00	6.67	0.632	18.61	0.91	10	18.3	Clear	None
11:41	6	6	320	21.02	0.00	6.67	0.631	61.41	4.22	9.8	13.9	Clear	None
11:45	4	10	320	21.03	0.00	6.65	0.633	131.23	5.12	10	13.2	Clear	None
11:50	5	15	320	21.03	0.00	6.65	0.632	98.22	3.76	10	10.7	Clear	None
11:55	5	20	320	21.03	0.00	6.62	0.629	63.4	6.33	9.9	10.2	Clear	None
12:00	5	25	320	21.03	0.00	6.61	0.632	69.73	6.55	9.8	8.6	Clear	None
12:05	5	30	320	21.05	0.00	6.6	0.628	75.77	7.42	10.2	5.8	Clear	None
12:10	5	35	320	21.05	0.00	6.6	0.627	62.14	7.03	10	4.6	Clear	None
12:15	5	40	320	21.06	0.00	6.6	0.628	70.71	6.82	10.3	3.1	Clear	None
12:20	5	45	320	21.05	0.00	6.59	0.625	14.08	6.44	9.9	1.1	Clear	None
12:25	5	50	320	21.05	0.00	6.6	0.628	10.08	1.67	10.5	-1.3	Clear	None
12:30	5	55	320	21.05	0.00	6.59	0.624	6.3	1.08	10.7	-2.4	Clear	None
12:35	5	60	320	21.05	0.00	6.59	0.624	2.4	1.11	10.2	-3.8	Clear	None
12:40	5	65	320	21.06	0.00	6.57	0.623	2.47	1.02	10.3	-4.9	Clear	None
12:45	5	70	320	21.06	0.00	6.57	0.624	2.8	0.69	10.2	-6.4	Clear	None
12:50	5	75	320	21.06	0.00	6.57	0.623	2.31	0.73	10.3	-7.6	Clear	None
12:55	5	80	320	21.06	0.00	6.56	0.621	1.96	0.69	10.2	-8.5	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Barrier wall	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	PZ-12-03	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39.0 degrees F and Cloudy. The wind is blowing undefined at 25 mph	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	19.92	Total Depth (ft-bmp)	34	Water Column(ft)	14.08
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow
Sample Time	14:10	Volumes Purged	1.78	Sample ID	PZ-2012-03-FAL20
Purge Start	13:20	Gallons Purged	4.07	Replicate/ Code No.	
Purge End	14:24				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:25	0	0	320	19.92	0.00	6.68	0.513	7.46	7.19	8.8	-8.9	Yellow	None
13:31	6	6	320	19.92	0.00	6.63	0.512	7.99	7.96	8.9	-7.5	Yellow	None
13:35	4	10	320	19.93	0.00	6.62	0.512	32.99	0.85	8.6	-8.5	Yellow	None
13:40	5	15	320	19.93	0.00	6.62	0.51	34.04	0.58	8.6	-10.1	Yellow	None
13:45	5	20	320	19.93	0.00	6.63	0.509	33.01	0.46	8.6	-11.9	Yellow	None
13:50	5	25	320	19.93	0.00	6.63	0.507	34.04	0.43	8.6	-13.7	Yellow	None
13:55	5	30	320	19.93	0.00	6.63	0.506	31.2	0.4	8.7	-14.9	Yellow	None
14:00	5	35	320	19.93	0.00	6.63	0.505	30.2	0.39	8.6	-16.3	Yellow	None
14:05	5	40	320	19.94	0.00	6.63	0.504	30.04	0.37	8.5	-17.6	Yellow	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: Old SHL lock, changed to 2006 keyed lock

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-04	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	37.0 degrees F and Cloudy. The wind is blowing undefined at 37 mph	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	20.9	Total Depth (ft-bmp)	34	Water Column(ft)	13.1
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow
Sample Time	16:00	Volumes Purged	2.00	Sample ID	PZ-12-04-FAL20
Purge Start	15:00	Gallons Purged	4.26	Replicate/ Code No.	
Sampled by	Diane Champagne				

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:05	0	0	275	20.9	0.00	6.54	0.576	69.77	0.99	8.6	10.1	Orange	None
15:10	5	5	275	20.91	0.00	6.53	0.576	8.03	0.79	8.7	8.9	Orange	None
15:15	5	10	275	20.91	0.00	6.5	0.574	9.87	0.78	8.5	8.7	Orange	None
15:20	5	15	275	20.91	0.00	6.5	0.573	10.8	0.91	8.5	7.6	Orange	None
15:25	5	20	275	20.91	0.00	6.48	0.575	9.76	1.3	8.1	7.1	Orange	None
15:30	5	25	275	20.91	0.00	6.48	0.572	24.91	1.06	8.5	5	Orange	None
15:36	6	31	275	20.91	0.00	6.5	0.572	26.32	0.82	8.6	2.3	Orange	None
15:40	4	35	275	20.91	0.00	6.5	0.569	24.29	0.71	8.6	0.9	Orange	None
15:45	5	40	275	20.91	0.00	6.5	0.569	24.6	0.55	8.1	-0.2	Orange	None
15:50	5	45	275	20.92	0.00	6.5	0.571	24.42	0.53	8.3	-1.3	Orange	None
15:55	5	50	275	20.92	0.00	6.5	0.572	24.24	0.52	8.2	-2.3	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-99-31A	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39 °F, Overcast, W winds at 20 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	2.05	Total Depth (ft-bmp)	15.65	Water Column(ft)	13.6
MP Elevation		Pump Intake (ft-bmp)	10	Purge Method	Low-Flow
Sample Time	11:00	Volumes Purged		Sample ID	SHM-99--31A-FAL20
Purge Start	10:16	Gallons Purged		Replicate/ Code No.	
Purge End	11:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:27	0	0	250	2.1	0.00	6.7	0.091	9.8	1.69	8.7	271.4	Clear	None
10:30	3	3	250	2.1	0.00	6.3	0.091	13.8	1.35	8.8	270.6	Clear	None
10:33	3	6	250	2.1	0.00	6.05	0.09	11.5	1.23	8.8	269.6	Clear	None
10:37	4	10	250	2.1	0.00	5.85	0.088	11.7	1.14	8.3	269	Clear	None
10:40	3	13	250	2.1	0.00	5.72	0.089	11.9	1.05	8.6	268.2	Clear	None
10:43	3	16	250	2.1	0.00	5.66	0.087	14.6	1.02	8	266.9	Clear	None
10:46	3	19	250	2.1	0.00	5.61	0.086	14	1	8.1	266.7	Clear	None
10:49	3	22	250	2.1	0.00	5.58	0.086	14.6	0.99	8.2	265.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHP-2016-3A		Date	11/02/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	38 °F, Sunny, W winds at 18 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	12.5	Total Depth (ft-bmp)	27.37	Water Column(ft)	14.87	Gallons in Well	0.6
MP Elevation		Pump Intake (ft-bmp)	24	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	14:45	Volumes Purged		Sample ID	SHP-2016-3A-FAL20	Sampled by	Connor Rosenbaum
Purge Start	14:10	Gallons Purged		Replicate/ Code No.			
Purge End	15:00						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:13	0	0	250	13.22	0.00	6.81	0.084	7.1	1.95	7.6	155.7	Clear	None
14:16	3	3	250	13.8	0.00	6.72	0.087	7.8	1.7	7.3	153	Clear	None
14:19	3	6	250	12.74	0.00	6.65	0.091	14.5	1.54	6.8	151.4	Clear	None
14:22	3	9	250	12.74	0.00	6.59	0.096	8.8	1.39	6.6	151.1	Clear	None
14:26	4	13	250	12.74	0.00	6.57	0.097	5.7	1.3	6.6	150.9	Clear	None
14:29	3	16	250	12.74	0.00	6.55	0.097	3.5	1.26	6.6	151.1	Clear	None
14:32	3	19	250	12.74	0.00	6.54	0.097	3	1.21	6.6	150.9	Clear	None
14:35	3	22	250	12.74	0.00	6.53	0.097	3.4	1.17	6.6	150.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-3B	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39 °F, Sunny, W winds at 11 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	11.5	Total Depth (ft-bmp)	76.8	Water Column(ft)	65.3
MP Elevation		Pump Intake (ft-bmp)	73	Purge Method	Low-Flow
Sample Time	14:30	Volumes Purged		Sample ID	EPA-PZ-2012-3B-FAL2012
Purge Start	13:03	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	13:40			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:07	0	0	250	11.7	0.00	6.43	0.311	14.3	1.84	10	148.7	Clear	None
13:10	3	3	250	11.7	0.00	6.39	0.313	22.8	1.25	10	141	Clear	None
13:13	3	6	250	11.7	0.00	6.39	0.312	29.2	1.05	9.8	136.9	Clear	None
13:16	3	9	250	11.7	0.00	6.4	0.312	34.3	0.96	9.7	134.1	Clear	None
13:19	3	12	250	11.7	0.00	6.41	0.311	35.3	0.91	9.7	132.4	Clear	None
13:22	3	15	250	11.7	0.00	6.42	0.311	35.5	0.88	9.5	130.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-3A	Date	11/02/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39 °F, Overcast, W winds at 22 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	11.6	Total Depth (ft-bmp)	26.75	Water Column(ft)	15.15
MP Elevation		Pump Intake (ft-bmp)	22	Purge Method	Low-Flow
Sample Time	12:45	Volumes Purged		Sample ID	EPA-PZ-2012-3A-FAL20
Purge Start	11:57	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	12:50			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:01	0	0	250	11.64	0.00	5.73	0.183	96.5	2.8	9.7	245.5	Clear	None
12:04	3	3	250	11.64	0.00	5.72	0.182	100.5	1.92	9.5	241.5	Clear	None
12:07	3	6	250	11.64	0.00	5.7	0.183	56.5	1.98	9.2	237.9	Clear	None
12:10	3	9	250	11.64	0.00	5.7	0.183	43.3	1.4	9	235.4	Clear	None
12:13	3	12	250	11.64	0.00	5.7	0.183	30	1.19	9.5	233.7	Clear	None
12:16	3	15	250	11.64	0.00	5.7	0.185	26.3	1.13	9.2	231.9	Clear	None
12:19	3	18	250	11.64	0.00	5.71	0.187	17.5	1.07	9.6	230.3	Clear	None
12:22	3	21	250	11.64	0.00	5.72	0.19	15.1	1.03	10	228.4	Clear	None
12:25	3	24	250	11.64	0.00	5.73	0.192	8.7	1	10.3	226.5	Clear	None
12:28	3	27	250	11.64	0.00	5.75	0.193	8.2	0.95	10.3	224.4	Clear	None
12:31	3	30	250	11.64	0.00	5.76	0.195	8.4	0.92	10.6	222.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____ Well Locked at Arrival: yes
 Condition of Well: Good condition _____ Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-7	Date	11/03/2020		
Project Name/Location	Devens, Massachusetts		Weather(°F)	37.9 degrees F and Clear. The wind is blowing W at 41.1 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	17.6	Total Depth (ft-bmp)	22.8	Water Column(ft)	5.2	Gallons in Well	1.32
MP Elevation		Pump Intake (ft-bmp)	20.8	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	10:10	Volumes Purged	2.65	Sample ID	SHL-7-FAL20	Sampled by	Nicholas Burch
Purge Start	09:10	Gallons Purged	3.50	Replicate/ Code No.			
Purge End	10:25						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:35	0	0	250	17.6	0.00	6.19	0.181	160	2.8	8.5	106.6	Clear	None
09:40	5	5	250	17.6	0.00	5.96	0.189	50	1.34	8.9	91.1	Clear	None
09:45	5	10	250	17.6	0.00	5.92	0.184	21.5	1	8.9	85.5	Clear	None
09:50	5	15	250	17.6	0.00	5.91	0.181	14.5	0.87	9.1	83.8	Clear	None
09:55	5	20	250	17.6	0.00	5.91	0.179	9.8	0.82	9.1	83.7	Clear	None
09:58	3	23	250	17.6	0.00	5.91	0.178	9.3	0.78	9.3	83.8	Clear	None
10:03	5	28	250	17.6	0.00	5.91	0.175	8.9	0.79	9.1	84.3	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-05	Date	11/03/2020		
Project Name/Location	Devens, Massachusetts		Weather(°F)	39.9 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	21.55	Total Depth (ft-bmp)	36	Water Column(ft)	14.45	Gallons in Well	2.35
MP Elevation		Pump Intake (ft-bmp)	31	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	12:55	Volumes Purged	3.13	Sample ID	PZ-12-05-FAL20	Sampled by	Diane Champagne
Purge Start	11:30	Gallons Purged	7.34	Replicate/ Code No.			

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:46	0	0	275	21.55	0.00	6.61	0.288	25.06	2.46	9.5	74.9		
11:50	4	4	350	21.6	0.00	6.64	0.282	23.66	2.4	9.7	56.3		
11:56	6	10	350	21.6	0.00	6.63	0.281	27.8	3.56	9.5	56.7		
12:00	4	14	350	21.6	0.00	6.61	0.28	3.77	3.99	9.3	58.4		
12:15	15	29	350	21.6	0.00	6.56	0.279	3.89	5.62	9.5	56.3		
12:20	5	34	350	21.6	0.00	6.58	0.279	4.22	0.85	9.4	53.8		
12:24	4	38	350	21.6	0.00	6.59	0.276	3.58	0.93	9.6	51.6		
12:30	6	44	350	21.6	0.00	6.58	0.279	3.86	1.03	9.4	49.5		
12:40	10	54	350	21.6	0.00	6.52	0.277	3.41	0.88	9.3	47.8		
12:45	5	59	350	21.6	0.00	6.5	0.277	3.31	0.86	9.5	46		
12:50	5	64	350	21.6	0.00	6.51	0.277	3.37	0.91	9.4	43.8		

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-06	Date	11/03/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39.9 degrees F and Mostly Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	24.22	Total Depth (ft-bmp)	35	Water Column(ft)	10.78
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
Sample Time	14:00	Volumes Purged	2.53	Sample ID	PZ-12-06-FAL20
Purge Start	13:10	Gallons Purged	4.43	Replicate/ Code No.	
Purge End	14:07				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:20	0	0	350	24.26	0.00	6.38	0.271	7.1	1.11	10.4	57.7	Orange	None
13:25	5	5	350	24.27	0.00	6.35	0.258	7.14	0.85	10.3	57.8	Orange	None
13:30	5	10	350	24.29	0.00	6.32	0.248	3.22	0.73	10.6	58	Orange	None
13:35	5	15	350	24.34	0.00	6.32	0.247	2.92	0.69	10.5	58	Orange	None
13:41	6	21	350	24.34	0.00	6.29	0.245	3.35	0.65	10.6	58.5	Orange	None
13:46	5	26	350	24.34	0.00	6.27	0.244	3.96	0.61	10.3	58.5	Orange	None
13:50	4	30	350	24.34	0.00	6.24	0.243	3.61	0.61	10.6	59.3	Orange	None
13:55	5	35	350	24.34	0.00	6.24	0.243	3.11	0.6	10.3	58.9	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 2006

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-11-02	Date	11/03/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	41.0 degrees F and Mostly Cloudy. The wind is blowing NW at 45.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	23.06	Total Depth (ft-bmp)	66	Water Column(ft)	42.94
MP Elevation		Pump Intake (ft-bmp)	60	Purge Method	Low-Flow
Sample Time	14:50	Volumes Purged	0.08	Sample ID	SHM-11-02-FAL20
Purge Start	14:10	Gallons Purged	2.31	Replicate/ Code No.	
Purge End	15:04				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:16	0	0	325	23.06	0.00	6.45	0.533	39.96	1.19	10.4	28.8	Black	None
14:20	4	4	200	23.8	0.00	6.53	0.542	16.31	0.81	9.9	15.9	Black	None
14:25	5	9	200	23.88	0.00	6.59	0.535	16.1	0.65	9.3	4.5	Black	None
14:30	5	14	200	23.99	0.00	6.65	0.533	15.21	0.57	9.2	-8.3	Black	None
14:35	5	19	200	24.21	0.00	6.68	0.534	15.2	0.53	9.3	-22.8	Black	None
14:40	5	24	200	24.6	0.00	6.72	0.536	15.56	0.5	9.4	-28.4	Black	None
14:45	5	29	200	24.6	0.00	6.76	0.533	14.86	0.49	9.3	-29.7	Black	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 2006

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-22	Date	11/03/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	40 °F, Sunny, NW winds at 17 mph.	
Measuring Pt. Description	Top of Outer Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	9.15	Total Depth (ft-bmp)	111.2	Water Column(ft)	102.05
MP Elevation		Pump Intake (ft-bmp)	108	Purge Method	Low-Flow
Sample Time	13:15	Volumes Purged		Sample ID	SHL-22-FAL20
Purge Start	12:39	Gallons Purged		Replicate/ Code No.	SHL-DUP07-FAL20
Purge End	13:34				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:42	0	0	200	9.3	0.00	7.53	0.301	2.4	5	9.1	58	Clear	None
12:45	3	3	200	9.37	0.00	6.98	0.348	2.4	2.2	9.1	76	Clear	None
12:49	4	7	200	9.37	0.00	6.8	0.353	2.4	1.42	8.9	85.6	Clear	None
12:53	4	11	200	9.37	0.00	6.72	0.352	2.4	1.27	8.6	92.1	Clear	None
12:56	3	14	200	9.45	0.00	6.69	0.35	3.4	1.27	8.7	94.3	Clear	None
12:59	3	17	200	9.5	0.00	6.67	0.352	2.4	1.17	8.7	97.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-9	Date	11/03/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	42 °F, Sunny, NW winds at 14 mph.	
Measuring Pt. Description	Top of Outer Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	20.7	Total Depth (ft-bmp)	26.8	Water Column(ft)	6.1
MP Elevation		Pump Intake (ft-bmp)	23	Purge Method	Low-Flow
Sample Time	15:10	Volumes Purged		Sample ID	SHL-9-FAL20
Purge Start	14:01	Gallons Purged		Replicate/ Code No.	
Purge End	15:15				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:32	0	0	200	11.83	0.00	7.36	0.136	75	3.39	8.9	5	Brown	None
14:35	3	3	200	11.83	0.00	7.16	0.146	71.2	2.96	8.8	14.7	Brown	None
14:37	2	5	200	11.83	0.00	6.94	0.157	70.1	2.36	8.7	19.8	Brown	None
14:40	3	8	200	11.83	0.00	6.78	0.172	70	1.72	9	18.3	Brown	None
14:43	3	11	200	11.83	0.00	6.7	0.181	71	1.42	8.9	15.4	Brown	None
14:46	3	14	200	11.83	0.00	6.64	0.185	70	1.17	8.9	12.2	Brown	None
14:49	3	17	200	11.83	0.00	6.6	0.189	70	1.01	8.9	9.9	Brown	None
14:52	3	20	200	11.83	0.00	6.56	0.192	71	0.9	8.9	6.6	Brown	None
14:55	3	23	200	11.83	0.00	6.54	0.193	71.2	0.85	8.8	5.1	Brown	None
14:58	3	26	200	11.83	0.00	6.52	0.194	72.3	0.83	8.7	3.6	Brown	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-93-22C	Date	11/03/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	38 °F, Sunny, W winds at 11 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Well Casing Material	PVC				
Static Water Level (ft-bmp)	10.06	Total Depth (ft-bmp)	136.75	Water Column(ft)	126.69
Gallons in Well	82.34				
MP Elevation		Pump Intake (ft-bmp)	133	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	11:45	Volumes Purged		Sample ID	SHM-93-22C-FAL20
Sampled by	Connor Rosenbaum				
Purge Start	11:26	Gallons Purged		Replicate/ Code No.	
Purge End	11:51				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:28	0	0	200	10.4	0.00	7.48	0.193	3.3	3.04	9.4	-20	Clear	None
11:31	3	3	200	10.65	0.00	7.49	0.193	3.5	2.58	9.4	-18	Clear	None
11:34	3	6	200	10.89	0.00	7.51	0.193	4.5	2.47	9.3	-15.5	Clear	None
11:37	3	9	200	11.1	0.00	7.52	0.192	4.2	2.46	9.2	-13.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-3B		Date	11/03/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	38 °F, Sunny, W winds at 13 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	12.13	Total Depth (ft-bmp)	87.42	Water Column(ft)	75.29	Gallons in Well	3.06
MP Elevation		Pump Intake (ft-bmp)	84	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:20	Volumes Purged		Sample ID	SHP-2016-3B-FAL20	Sampled by	Connor Rosenbaum
Purge Start	08:36	Gallons Purged		Replicate/ Code No.			
Purge End	09:33						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:41	0	0	250	12.15	0.00	7.23	0.16	8.5	2.27	7.1	-23.6	Clear	None
08:44	3	3	250	12.15	0.00	6.71	0.156	8.4	1.55	7	-30.4	Clear	None
08:47	3	6	250	12.15	0.00	6.65	0.156	7.9	1.5	7	-31.1	Clear	None
08:53	6	12	250	12.15	0.00	6.42	0.153	8.5	1.23	7	-35	Clear	None
08:56	3	15	250	12.15	0.00	6.36	0.151	9.7	1.13	6.9	-36.7	Clear	None
08:59	3	18	250	12.15	0.00	6.31	0.15	10.5	1.06	7.2	-38.7	Clear	None
09:02	3	21	250	12.15	0.00	6.3	0.15	11.2	1.04	7.2	-40.5	Clear	None
09:06	4	25	250	12.15	0.00	6.3	0.149	11.8	1	7.3	-42.4	Clear	None
09:09	3	28	250	12.15	0.00	6.3	0.151	11.8	1.01	7.3	-43.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-93-22B	Date	11/03/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	38 °F, Sunny, W winds at 11 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	9.43	Total Depth (ft-bmp)	93.45	Water Column(ft)	84.02
MP Elevation		Pump Intake (ft-bmp)	90	Purge Method	Low-Flow
Sample Time	10:50	Volumes Purged		Sample ID	SHM-93-22B-FAL20
Purge Start	10:17	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	10:58			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:22	0	0	200	9.44	0.00	6.42	0.315	59	1.77	9.1	-10.7	Clear	None
10:26	4	4	200	9.44	0.00	6.41	0.319	44	1.35	9.12	-15.5	Clear	None
10:29	3	7	200	9.44	0.00	6.42	0.321	42.2	1.1	9.1	-19	Clear	None
10:32	3	10	200	9.44	0.00	6.43	0.322	42.2	0.98	9.1	-20.9	Clear	None
10:35	3	13	200	9.44	0.00	6.44	0.322	42	0.92	9.1	-22.9	Clear	None
10:38	3	16	200	9.44	0.00	6.45	0.322	42	0.9	9.1	-24.2	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-2B	Date	11/05/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	66 °F, Sunny, SW winds at 12 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	11.6	Total Depth (ft-bmp)	83.1	Water Column(ft)	71.5
MP Elevation		Pump Intake (ft-bmp)	80	Purge Method	Low-Flow
Sample Time	12:50	Volumes Purged		Sample ID	EPA-PZ-2012-2B-FAL20
Purge Start	12:06	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	13:00			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:09	0	0	200	11.7	0.00	6.2	0.205	400	2	12.7	98.6	Clear	None
12:11	2	2	200	11.7	0.00	6.14	0.211	420	1.81	12.7	95	Clear	None
12:14	3	5	200	11.7	0.00	5.96	0.254	440	1.22	12.5	80	Clear	None
12:18	4	9	200	11.7	0.00	5.89	0.276	335	1.04	12.6	68	Clear	None
12:21	3	12	200	11.7	0.00	5.88	0.281	200	0.96	12.3	63.4	Clear	None
12:24	3	15	200	11.7	0.00	5.88	0.285	107.6	0.95	12.4	61	Clear	None
12:27	3	18	200	11.7	0.00	5.88	0.285	64.1	0.92	12.2	58.9	Clear	None
12:30	3	21	200	11.7	0.00	5.89	0.287	45	0.89	12.4	56.9	Clear	None
12:33	3	24	200	11.7	0.00	5.9	0.289	30	0.86	12.4	55.5	Clear	None
12:36	3	27	200	11.7	0.00	5.91	0.285	15.9	0.85	12.1	55.1	Clear	None
12:40	4	31	200	11.7	0.00	5.92	0.285	13.1	0.84	12.2	55.3	Clear	None
12:44	4	35	200	11.7	0.00	5.92	0.288	13	0.83	12.3	54.3	Clear	None
12:47	3	38	200	11.7	0.00	5.93	0.288	12.4	0.81	12.4	54.2	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Location:	_____	Well Locked at Arrival:	yes _____
Condition of Well:	Good condition _____	Well Locked at Departure:	yes _____
Well Completion:	Stick-up _____	Key Number To Well:	M15 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-2A	Date	11/05/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	56 °F, Sunny, S winds at 9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Well Casing Material	PVC				
Static Water Level (ft-bmp)	11.58	Total Depth (ft-bmp)	28.17	Water Column(ft)	16.59
Gallons in Well	0.67				
MP Elevation		Pump Intake (ft-bmp)	25	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	11:15	Volumes Purged		Sample ID	EPA-PZ-2012-2A-FAL20
Sampled by	Connor Rosenbaum				
Purge Start	10:32	Gallons Purged		Replicate/ Code No.	
Purge End	11:24				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:35	0	0	200	11.7	0.00	7.85	0.048	4.3	5.93	12	221.9	Clear	None
10:38	3	3	200	11.7	0.00	7.46	0.048	2.5	5.93	2.3	228.5	Clear	None
10:41	3	6	200	11.7	0.00	6.86	0.048	1.3	5.91	11.6	237.8	Clear	None
10:44	3	9	200	11.7	0.00	6.49	0.048	1.4	5.9	11.6	244	Clear	None
10:47	3	12	200	11.7	0.00	6.16	0.048	1.3	5.85	11.8	248.9	Clear	None
10:50	3	15	200	11.7	0.00	5.86	0.047	1.2	5.84	11.7	252.4	Clear	None
10:53	3	18	200	11.7	0.00	5.76	0.047	1.2	5.84	11.6	256.1	Clear	None
10:56	3	21	200	11.7	0.00	5.63	0.047	1.4	5.82	11.8	258.3	Clear	None
11:00	4	25	200	11.7	0.00	5.58	0.047	1.7	5.82	12.1	261.3	Clear	None
11:09	9	34	200	11.7	0.00	5.56	0.047	1.3	5.8	12.4	262.4	Clear	None
11:12	3	37	200	11.7	0.00	5.55	0.047	1.9	5.79	12.4	263.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____ Well Locked at Arrival: yes
 Condition of Well: Good condition _____ Well Locked at Departure: yes _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: M15

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-08	Date	11/05/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	69.1 degrees F and Clear. The wind is blowing SW at 37.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	27.35	Total Depth (ft-bmp)	32	Water Column(ft)	4.65
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
Sample Time	14:30	Volumes Purged	3.48	Sample ID	PZ-12-08-FAL20
Purge Start	13:45	Gallons Purged	2.64	Replicate/ Code No.	
Purge End	14:36				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:50	0	0	225	27.35	0.00	8.4	0.169	152.04	0.81	13.9	64.5	Orange	None
13:55	5	5	225	27.36	0.00	8.11	0.169	198.32	0.56	13.7	75.9	Orange	None
14:00	5	10	225	27.36	0.00	7.87	0.168	145.21	0.48	13.9	82.7	Orange	None
14:05	5	15	225	27.36	0.00	7.78	0.168	125.48	0.46	13.8	84.4	Orange	None
14:10	5	20	225	27.36	0.00	7.69	0.168	67.21	0.45	13.7	87.3	Orange	None
14:15	5	25	225	27.36	0.00	7.54	0.168	32.54	0.44	13.6	91.5	Orange	None
14:20	5	30	225	27.36	0.00	7.55	0.168	30.11	0.43	13.5	89.3	Orange	None
14:25	5	35	225	27.36	0.00	7.49	0.167	29.77	0.42	13.6	89.7	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	PZ-12-07	Date	11/05/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	68.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	27.75	Total Depth (ft-bmp)	30	Water Column(ft)	2.25
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow
Sample Time	13:20	Volumes Purged	8.96	Sample ID	PZ-12-07-FAL20
Purge Start	12:20	Gallons Purged	3.32	Replicate/ Code No.	
Purge End	13:34				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:30	0	0	210	27.8	0.00	8.57	0.062	288.32	8.31	13.1	61.4	Orange	None
12:35	5	5	210	27.84	0.00	8.41	0.09	334.68	7.55	13	77	Orange	None
12:40	5	10	210	27.86	0.00	8.13	0.165	350.14	6.31	12.9	96.1	Orange	None
12:45	5	15	210	27.86	0.00	7.85	0.211	336.26	5.03	12.7	106.4	Orange	None
12:51	6	21	210	27.86	0.00	7.83	0.231	332.16	4.39	12.7	107.6	Orange	None
12:55	4	25	210	27.86	0.00	7.74	0.233	304.93	4.25	12.8	110.1	Orange	None
13:01	6	31	210	27.87	0.00	7.75	0.235	283.93	4.09	12.8	106.1	Orange	None
13:05	4	35	210	27.83	0.00	7.73	0.239	326.08	4	12.7	104.7	Orange	None
13:10	5	40	210	27.81	0.00	7.68	0.246	321.27	3.91	12.8	103.5	Orange	None
13:15	5	45	210	27.81	0.00	7.69	0.241	330.66	3.85	12.9	100.4	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Barrier wall	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHP-2016-1A		Date	11/05/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	69.1 degrees F and Clear. The wind is blowing SW at 49.9 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	16.81	Total Depth (ft-bmp)	23	Water Column(ft)	6.19	Gallons in Well	0.25
MP Elevation		Pump Intake (ft-bmp)	20	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	15:40	Volumes Purged	10.99	Sample ID	SHP-2016-01A-FAL20	Sampled by	Diane Champagne
Purge Start	15:00	Gallons Purged	2.75	Replicate/ Code No.			
Purge End	15:42						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:05	0	0	280	16.81	0.00	7.99	0.044	8.6	4.13	13.4	80.2	Grayish Brown	Mild
15:10	5	5	280	16.83	0.00	7.88	0.044	28.16	3.57	13.1	88.1	Grayish Brown	Mild
15:15	5	10	280	16.84	0.00	7.81	0.044	22.19	3.51	13.1	91.7	Grayish Brown	Mild
15:20	5	15	280	16.84	0.00	7.74	0.045	8.44	3.43	13.1	95.1	Grayish Brown	Mild
15:25	5	20	280	16.84	0.00	7.69	0.045	8.76	3.47	12.9	98.1	Grayish Brown	Mild
15:31	6	26	280	16.84	0.00	7.64	0.045	8.81	3.51	12.9	100.9	Grayish Brown	Mild
15:35	4	30	280	16.84	0.00	7.64	0.045	8.48	3.52	12.9	101.3	Grayish Brown	Mild

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near treatment building, on grass	Well Locked at Arrival: no
Condition of Well: Missing lock	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-02	Date	11/05/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	70 °F, Sunny, SW winds at 12 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	13.04	Total Depth (ft-bmp)	72.85	Water Column(ft)	59.81
MP Elevation		Pump Intake (ft-bmp)	69	Purge Method	Low-Flow
Sample Time	15:00	Volumes Purged		Sample ID	SHM-13-02-FAL20
Purge Start	14:18	Gallons Purged		Replicate/ Code No.	
Purge End	15:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:22	0	0	200	13.06	0.00	6.76	0.245	30.1	3.13	12.7	121.4	Clear	None
14:25	3	3	200	13.06	0.00	6.4	0.244	21.4	2.39	13.4	133.8	Clear	None
14:28	3	6	200	13.06	0.00	6.24	0.243	16.5	2.2	13.5	143.2	Clear	None
14:32	4	10	200	13.06	0.00	6.17	0.241	12.3	2.13	13.2	150.6	Clear	None
14:36	4	14	200	13.06	0.00	6.14	0.244	10	2.08	13.6	155.8	Clear	None
14:41	5	19	200	13.06	0.00	6.13	0.244	9.3	2.05	13.6	161.2	Clear	None
14:45	4	23	200	13.06	0.00	6.13	0.245	9.4	2.04	13.5	164.6	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

Well Completion: Stick-up

Key Number To Well: M1

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHM-13-07	Date	11/05/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	70 °F, Sunny, SW winds at 11 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	19.15	Total Depth (ft-bmp)	35	Water Column(ft)	15.85
MP Elevation		Pump Intake (ft-bmp)	32	Purge Method	Low-Flow
Sample Time	16:00	Volumes Purged		Sample ID	SHM-13-07-FAL20
Purge Start	15:28	Gallons Purged		Replicate/ Code No.	
Purge End	16:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:33	0	0	200	19.15	0.00	6.39	0.496	220	1.27	14.7	-9.3	Clear	None
15:38	5	5	200	19.15	0.00	6.36	0.506	148.1	1.02	14.7	-16.1	Clear	None
15:41	3	8	200	19.15	0.00	6.34	0.504	111.2	0.96	14.6	-17.3	Clear	None
15:44	3	11	200	19.15	0.00	6.33	0.509	100	0.92	14.7	-19.2	Clear	None
15:47	3	14	200	19.15	0.00	6.33	0.504	77.3	0.89	14.7	-22.7	Clear	None
15:50	3	17	200	19.15	0.00	6.34	0.501	77.2	0.86	14.6	-24.8	Clear	None
15:53	3	20	200	19.15	0.00	6.35	0.498	77.3	0.85	14.6	-26.3	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Right side of rock driveway, next to bushes, parallel with electric meter on house	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-1B		Date	11/05/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	69.1 degrees F and Clear. The wind is blowing S at 29.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	18	Total Depth (ft-bmp)	85	Water Column(ft)	67	Gallons in Well	2.72
MP Elevation		Pump Intake (ft-bmp)	80	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	16:30	Volumes Purged	0.85	Sample ID	SHP-2016-1B-FAL20	Sampled by	Diane Champagne
Purge Start	15:45	Gallons Purged	2.30	Replicate/ Code No.			

Purge End	16:39												
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:50	0	0	280	18.21	0.00	7.58	0.129	7.97	1.43	12.4	79.7	Grayish Brown	None
15:55	5	5	180	18.41	0.00	7.49	0.176	6.89	0.44	12.6	67.8	Grayish Brown	None
16:00	5	10	180	18.44	0.00	7.46	0.191	7.67	0.38	12.4	61.6	Grayish Brown	None
16:06	6	16	180	18.44	0.00	7.47	0.191	7.87	0.33	0.34	55.6	Grayish Brown	None
16:10	4	20	180	18.44	0.00	7.47	0.193	7.18	0.32	12.3	51.9	Grayish Brown	None
16:16	6	26	180	18.44	0.00	7.46	0.202	7.17	0.31	12.3	47.5	Grayish Brown	None
16:20	4	30	180	18.44	0.00	7.46	0.206	7.15	0.3	12.5	46.2	Grayish Brown	None
16:25	5	35	180	18.44	0.00	7.46	0.207	6.62	0.3	12.5	45.5	Grayish Brown	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Grassy area near treatment building Well Locked at Arrival: no

Condition of Well: Good condition,Missing lock Well Locked at Departure: no

Well Completion: Flush mount Key Number To Well: NA

ft-bmp = feet below measuring point mS/cm = milliSiemens per centimeter mV = millivolts
in = inches NTU = Nephelometric Turbidity Unit °F = degrees Fahrenheit
ft = feet mg/L = milligrams per liter °C = degrees Celsius
mL/min = milliliters per minute

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHM-13-05	Date	11/06/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	53.1 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2.5
Static Water Level (ft-bmp)	16.9	Total Depth (ft-bmp)	87.3	Water Column(ft)	70.4
MP Elevation		Pump Intake (ft-bmp)	84.3	Purge Method	Low-Flow
Sample Time	09:00	Volumes Purged	0.12	Sample ID	SHM-13-05-FAL20
Purge Start	08:27	Gallons Purged	2.18	Replicate/ Code No.	
Purge End	09:15				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:40	0	0	250	16.9	0.00	7.11	0.255	3.5	3.45	12.9	197	Clear	None
08:45	5	5	250	16.9	0.00	6.68	0.165	3.5	1.67	12.4	204.6	Clear	None
08:48	3	8	250	17	0.00	6.45	0.145	3.7	1.25	12.3	209.1	Clear	None
08:51	3	11	250	17	0.00	6.28	0.135	3.8	1.32	12.3	214.2	Clear	None
08:54	3	14	250	17	0.00	6.18	0.134	4.1	1.21	12.4	216.2	Clear	None
08:57	3	17	250	17	0.00	6.14	0.134	4.3	1.16	12.4	216.9	Clear	None
09:00	3	20	250	17	0.00	6.13	0.134	3.7	1.15	12.4	216.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHL	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-04	Date	11/06/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	60.1 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	20.55	Total Depth (ft-bmp)	25.3	Water Column(ft)	4.75
MP Elevation		Pump Intake (ft-bmp)	23.3	Purge Method	Low-Flow
Sample Time	10:10	Volumes Purged	3.00	Sample ID	SHM-13-04-FAL20
Purge Start	09:35	Gallons Purged	2.31	Replicate/ Code No.	
Purge End	11:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:45	0	0	250	20.55	0.00	6.3	0.3	223	4.4	14.5	239.6	Clear	None
09:50	5	5	250	20.55	0.00	6.18	0.297	198	3.19	14.5	243.1	Clear	None
09:55	5	10	250	20.55	0.00	6.17	0.298	188	3.09	14.5	243	Clear	None
09:58	3	13	250	20.55	0.00	6.17	0.299	162	3.13	14.6	241.9	Clear	None
10:01	3	16	250	20.55	0.00	6.18	0.299	154	3.06	14.7	241.3	Clear	None
10:04	3	19	250	20.55	0.00	6.17	0.295	128	2.8	14.7	239.9	Clear	None
10:07	3	22	250	20.55	0.00	6.17	0.294	128	2.77	14.8	239.9	Clear	None
10:10	3	25	250	20.55	0.00	6.17	0.29	128	2.89	14.7	239	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: SHM	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-4B		Date	11/06/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	55 °F, Sunny, SW winds at 5 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	19.8	Total Depth (ft-bmp)	32.61	Water Column(ft)	12.81	Gallons in Well	0.52
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	11:20	Volumes Purged		Sample ID	SHP-2016-4B-FAL20	Sampled by	Connor Rosenbaum
Purge Start	10:52	Gallons Purged		Replicate/ Code No.			
Purge End	11:30						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:52	0	0	200	19.8	0.00	6.55	0.045	14	4.51	11.3	111.2	Clear	None
10:55	3	3	200	19.8	0.00	6.45	0.042	18.5	4.25	10.4	119.5	Clear	None
10:58	3	6	200	19.8	0.00	9.37	0.041	30.8	3.9	10.2	127.8	Clear	None
11:01	3	9	200	19.8	0.00	6.32	0.041	21.8	4.03	10.5	131.1	Clear	None
11:04	3	12	200	19.8	0.00	6.28	0.041	12.2	4.05	10.1	133.7	Clear	None
11:07	3	15	200	19.8	0.00	6.24	0.04	9	4.01	10.3	138	Clear	None
11:10	3	18	200	19.8	0.00	6.22	0.04	7.4	3.96	10.2	141.1	Clear	None
11:13	3	21	200	19.8	0.00	6.21	0.04	7.2	4.2	10	145.2	Clear	None
11:16	3	24	200	19.8	0.00	6.19	0.04	7.2	4.27	10.3	148.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-4A		Date	11/06/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	55 °F, Sunny, S winds at 4 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	19.18	Total Depth (ft-bmp)	92.45	Water Column(ft)	73.27	Gallons in Well	2.98
MP Elevation		Pump Intake (ft-bmp)	89	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	10:00	Volumes Purged		Sample ID	SHP-2016-4A-FAL20	Sampled by	Connor Rosenbaum
Purge Start	09:21	Gallons Purged		Replicate/ Code No.			
Purge End	10:05						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:21	0	0	200	19.2	0.00	6.97	0.221	80	1.8	9.9	-51.2	Clear	None
09:24	3	3	200	19.2	0.00	6.73	0.244	49.9	1.4	10	-55.2	Clear	None
09:27	3	6	200	19.2	0.00	6.58	0.264	41.3	1.2	10	-58.7	Clear	None
09:30	3	9	200	19.2	0.00	6.47	0.285	28.3	1.06	9.9	-61.5	Clear	None
09:33	3	12	200	19.2	0.00	6.42	0.295	19.8	1	10	-63.4	Clear	None
09:35	2	14	200	19.2	0.00	6.41	0.3	14.3	0.97	10	-64.7	Clear	None
09:38	3	17	200	19.2	0.00	6.4	0.303	12.4	0.95	10	-65.9	Clear	None
09:41	3	20	200	19.2	0.00	6.41	0.302	10.1	0.92	10	-67	Clear	None
09:44	3	23	200	19.2	0.00	6.42	0.302	7.5	0.91	10	-68	Clear	None
09:48	4	27	200	19.2	0.00	6.43	0.303	6.5	0.88	10	-69.1	Clear	None
09:51	3	30	200	19.2	0.00	6.43	0.305	6.5	0.87	10.1	-69.6	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____ Well Locked at Arrival: yes
Condition of Well: Good condition _____ Well Locked at Departure: yes _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-2A		Date	11/06/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	68.0 degrees F and Clear. The wind is blowing SW at 25.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	15.26	Total Depth (ft-bmp)	27.25	Water Column(ft)	11.99	Gallons in Well	0.49
MP Elevation		Pump Intake (ft-bmp)	24	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	12:30	Volumes Purged		Sample ID	SHP-2016-2A-FAL20	Sampled by	Connor Rosenbaum
Purge Start	11:55	Gallons Purged		Replicate/ Code No.			
Purge End	12:35						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:58	0	0	200	15.4	0.00	7.59	0.085	29	3.78	12	42.5	Clear	None
12:01	3	3	200	15.4	0.00	7.84	0.084	16.2	2.85	11.7	26.5	Clear	None
12:04	3	6	200	15.4	0.00	8.2	0.083	8.6	2.84	11.4	15.6	Clear	None
12:07	3	9	200	15.4	0.00	8.43	0.082	7.7	2.49	11.3	10.4	Clear	None
12:10	3	12	200	15.4	0.00	8.58	0.081	6.5	2.54	11.3	8.2	Clear	None
12:13	3	15	200	15.4	0.00	8.64	0.081	5.6	2.62	11.5	7.4	Clear	None
12:16	3	18	200	15.4	0.00	8.71	0.08	4.9	2.74	11.5	7.1	Clear	None
12:20	4	22	200	15.4	0.00	8.74	0.081	5	2.87	11.6	7.2	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: ☒ yes
Condition of Well: <u>Good condition</u>	Well Locked at Departure: ☒ yes
Well Completion: <u>Stick-up</u>	Key Number To Well: <u>3753</u>

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-2B		Date	11/06/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	70.0 degrees F and Clear. The wind is blowing S/SW at 25.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	15.31	Total Depth (ft-bmp)	87.71	Water Column(ft)	72.4	Gallons in Well	2.94
MP Elevation		Pump Intake (ft-bmp)	84	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	14:00	Volumes Purged		Sample ID	SHP-2016-2B-FAL20	Sampled by	Connor Rosenbaum
Purge Start	13:29	Gallons Purged		Replicate/ Code No.			
Purge End	14:13						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:31	0	0	200	15.35	0.00	6.93	0.264	40	1.2	10.5	-72.9	Clear	None
13:34	3	3	200	15.35	0.00	6.76	0.268	25.3	1.01	10.5	-74.4	Clear	None
13:37	3	6	200	15.35	0.00	6.61	0.27	9.1	0.88	10.4	-76.2	Clear	None
13:40	3	9	200	15.35	0.00	6.56	0.272	5.5	0.83	10.6	-76.9	Clear	None
13:43	3	12	200	15.35	0.00	6.53	0.27	4.5	0.81	10.4	-77.5	Clear	None
13:46	3	15	200	15.35	0.00	6.51	0.269	4.6	0.78	10.4	-78.2	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-7A	Date	11/06/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	53.1 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	23.6	Total Depth (ft-bmp)	28.87	Water Column(ft)	5.27
MP Elevation		Pump Intake (ft-bmp)	26	Purge Method	Low-Flow
Sample Time	09:45	Volumes Purged	8.05	Sample ID	EPA-PZ-2012-07A-FAL20
Purge Start	09:10	Gallons Purged	1.69	Replicate/ Code No.	
Purge End	10:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:15	0	0	180	23.6	0.00	8.36	0.366	9.23	5.25	12.2	106	Clear	None
09:22	7	7	180	23.6	0.00	8.2	0.371	3.83	5.18	12.2	113.2	Clear	None
09:25	3	10	180	23.6	0.00	8.13	0.374	3.61	5.09	12.4	116.1	Clear	None
09:30	5	15	180	23.6	0.00	8.04	0.379	2.61	5.04	12.5	119.8	Clear	None
09:35	5	20	180	23.6	0.00	8.02	0.383	3.06	4.98	12.6	120.7	Clear	None
09:40	5	25	180	23.6	0.00	7.97	0.375	3.24	4.94	12.7	122.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Sculley st	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-7B	Date	11/06/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	60.1 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	23.4	Total Depth (ft-bmp)	63.82	Water Column(ft)	40.42
MP Elevation		Pump Intake (ft-bmp)	61	Purge Method	Low-Flow
Sample Time	10:50	Volumes Purged		Sample ID	EPA-PZ-2012-7B-FAL20
Purge Start	10:05	Gallons Purged	0.00	Replicate/ Code No.	
Sample Method		Well Casing Material	PVC	Gallons in Well	1.64
		Sample Method	Low-Flow	Sampled by	Diane Champagne

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:06	0	0	320	23.4	0.00	8.55	0.147	6.53	2.02	12.2	8.4	Clear	None
10:11	5	5	300	23.41	0.00	8.44	0.154	3.06	0.8	12	78.3	Clear	None
10:15	4	9	300	23.42	0.00	8.4	0.154	3.77	0.64	12.2	73.4	Clear	None
10:21	6	15	300	23.42	0.00	8.37	0.152	3.32	0.57	12.2	64.3	Clear	None
10:25	4	19	300	23.43	0.00	8.32	0.149	3.54	0.54	12.4	60.9	Clear	None
10:30	5	24	300	23.43	0.00	8.29	0.148	3.83	0.52	12.3	53.4	Clear	None
10:36	6	30	300	23.42	0.00	8.21	0.147	3.11	0.49	12.3	45.3	Clear	None
10:40	4	34	300	23.42	0.00	8.16	0.146	2.92	0.48	12.6	42.5	Clear	None
10:45	5	39	300	23.42	0.00	8.12	0.145	3.48	0.46	12.6	44.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Sculley st	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHM-05-41C Date 11/06/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		64.0 degrees F and Clear. The wind is blowing undefined at 20.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	12	Total Depth (ft-bmp)	93	Water Column(ft)	81	Gallons in Well	13.16
MP Elevation		Pump Intake (ft-bmp)	90	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	12:10	Volumes Purged	0.39	Sample ID	SHM-05-41C-FAL20	Sampled by	Diane Champagne
Purge Start		Gallons Purged	5.12	Replicate/ Code No.			

Purge End		12:36											
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:16	0	0	300	12	0.00	7	3.285	9.5	1.08	11.2	76.2	Yellow	None
11:20	4	4	375	12.33	0.00	7.14	2.955	11.01	0.74	11.6	57.8	Yellow	None
11:25	5	9	375	12.33	0.00	7.26	2.701	10.1	0.55	11.8	40	Yellow	None
11:29	4	13	375	12.33	0.00	7.33	2.519	3.37	0.5	11.8	30.6	Yellow	None
11:36	7	20	375	12.34	0.00	7.42	2.228	3.41	0.46	12.2	14.1	Yellow	None
11:40	4	24	375	12.34	0.00	7.48	2.075	2.75	0.45	12.3	6.9	Yellow	None
11:46	6	30	375	12.34	0.00	7.49	1.989	3.03	0.47	12.6	0.3	Yellow	None
11:51	5	35	375	12.34	0.00	7.52	1.95	2.99	0.52	12.9	-5	Yellow	None
11:56	5	40	375	12.34	0.00	7.55	1.985	2.88	0.53	13.3	-10.8	Yellow	None
12:00	4	44	375	12.34	0.00	7.57	1.944	2.95	0.54	13.7	-15.2	Yellow	None
12:05	5	49	375	12.34	0.00	7.58	1.935	3.34	0.54	13.6	-19.9	Yellow	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Sculley st

Well Locked at Arrival: no

Condition of Well: Needs repairs

Well Locked at Departure: no

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHM-05-41A Date 11/06/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		70.0 degrees F and Clear. The wind is blowing S/SW at 25.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	11.96	Total Depth (ft-bmp)	44	Water Column(ft)	32.04	Gallons in Well	5.21
MP Elevation		Pump Intake (ft-bmp)	60	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	13:50	Volumes Purged	0.99	Sample ID	SHM-05-41A-FAL20	Sampled by	
Purge Start	12:50	Gallons Purged	5.15	Replicate/ Code No.			
Purge End	13:56						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:57	0	0	330	11.96	0.00	8.88	0.108	8.05	0.61	11.5	-15.8	Orange	None
13:02	5	5	330	11.96	0.00	8.72	0.104	11.19	0.47	11.4	-5.9	Orange	None
13:05	3	8	330	11.96	0.00	8.63	0.104	10.78	0.44	11.3	-0.8	Orange	None
13:10	5	13	330	11.96	0.00	8.56	0.103	4.83	0.41	11.3	3.3	Orange	None
13:15	5	18	330	11.96	0.00	8.46	0.104	7.3	0.38	11.7	8.3	Orange	None
13:20	5	23	330	11.96	0.00	8.4	0.104	7.91	0.36	11.5	10.8	Orange	None
13:25	5	28	330	11.96	0.00	8.34	0.104	7.33	0.34	11.8	13.1	Orange	None
13:30	5	33	330	11.96	0.00	8.21	0.104	7.64	0.32	11.8	17.8	Orange	None
13:35	5	38	330	11.96	0.00	8.21	0.104	6.83	0.32	11.9	18	Orange	None
13:40	5	43	330	11.96	0.00	8.21	0.104	6.38	0.32	11.9	18.1	Orange	None
13:46	6	49	330	11.96	0.00	8.17	0.104	6.25	0.32	11.8	19.8	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Sculley st	Well Locked at Arrival: no
Condition of Well: Good condition,Missing bolts,Needs repairs	Well Locked at Departure: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHM-05-41B Date 11/06/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		72.0 degrees F and Clear. The wind is blowing W/SW at 41.1 mph.	
Measuring Pt. Description		Top of Inner Casing		Screen Setting (ft-bmp)		--	
				Casing Diameter (in)		2	
				Well Casing Material		PVC	
Static Water Level (ft-bmp)		11.81		Total Depth (ft-bmp)		64	
				Water Column(ft)		52.19	
				Gallons in Well		8.48	
MP Elevation				Pump Intake (ft-bmp)		61	
				Purge Method		Low-Flow	
				Sample Method		Low-Flow	
Sample Time		14:55		Volumes Purged		0.58	
				Sample ID		SHM-05-41B-FAL20	
				Sampled by			
Purge Start		14:00		Gallons Purged		4.89	
				Replicate/ Code No.			
Purge End		15:05					

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:10	0	0	350	11.81	0.00	7.5	0.807	17.8	0.64	11.4	37.9	Orange	None
14:15	5	5	350	11.81	0.00	7.59	0.617	17.52	0.57	11.4	29.3	Orange	None
14:20	5	10	350	11.81	0.00	7.62	0.538	12.12	0.54	11.5	24.4	Orange	None
14:25	5	15	350	11.81	0.00	7.61	0.518	12.01	0.53	11.3	22.3	Orange	None
14:30	5	20	350	11.81	0.00	7.68	0.431	6.3	0.5	11.3	14.7	Orange	None
14:35	5	25	350	11.81	0.00	7.68	0.425	5.73	0.5	11.3	14.2	Orange	None
14:42	7	32	350	11.81	0.00	7.64	0.422	5.95	0.48	11.3	12.4	Orange	None
14:46	4	36	350	11.81	0.00	7.65	0.428	5.55	0.48	11.3	10.4	Orange	None
14:50	4	40	350	11.81	0.00	7.67	0.423	5.51	0.46	11.4	7.9	Orange	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Sculley st	Well Locked at Arrival: no
Condition of Well: Needs repairs	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-5A		Date	11/09/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	43.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	16.37	Total Depth (ft-bmp)	32.92	Water Column(ft)	16.55	Gallons in Well	0.67
MP Elevation		Pump Intake (ft-bmp)	29	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	10:00	Volumes Purged		Sample ID	SHP-2016-5A-FAL20	Sampled by	Connor Rosenbaum
Purge Start	09:10	Gallons Purged		Replicate/ Code No.			
Purge End	10:05						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:18	0	0	200	16.46	0.00	7.47	0.153	17.6	1.85	10.9	14.7	Clear	None
09:21	3	3	200	16.45	0.00	7.23	0.153	15.6	1738	10.8	12.8	Clear	None
09:24	3	6	200	16.45	0.00	6.85	0.154	14	0.96	10.9	7.1	Clear	None
09:28	4	10	200	16.45	0.00	6.67	0.154	15.1	0.87	11	4	Clear	None
09:31	3	13	200	16.45	0.00	6.58	0.155	35.2	0.82	11	2.1	Clear	None
09:34	3	16	200	16.45	0.00	6.5	0.155	38.5	0.79	11.1	0.3	Clear	None
09:38	4	20	200	16.45	0.00	6.44	0.156	3.41	0.76	11	-1.9	Clear	None
09:41	3	23	200	16.45	0.00	6.42	0.156	2.84	0.74	11.1	-3.2	Clear	None
09:45	4	27	200	16.45	0.00	6.4	0.157	2.79	0.72	11.2	-5.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-5B		Date	11/09/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	54.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	PVC
Static Water Level (ft-bmp)	16.36	Total Depth (ft-bmp)	92.45	Water Column(ft)	76.09	Gallons in Well	3.09
MP Elevation		Pump Intake (ft-bmp)	70	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	11:10	Volumes Purged		Sample ID	SHP-2016-5B-FAL20	Sampled by	Connor Rosenbaum
Purge Start	10:23	Gallons Purged		Replicate/ Code No.			
Purge End	11:15						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:28	0	0	200	16.36	0.00	6.48	0.335	6.2	1.09	12.9	-78.9	Clear	None
10:34	6	6	200	16.36	0.00	6.48	0.334	6	1.06	12.8	-79.2	Clear	None
10:37	3	9	200	16.36	0.00	6.49	0.33	7.2	0.97	12.7	-80.5	Clear	None
10:41	4	13	200	16.36	0.00	6.5	0.331	9.2	0.91	12.7	-81.6	Clear	None
10:44	3	16	200	16.42	0.00	6.52	0.33	11.9	0.87	12.8	-82.9	Clear	None
10:47	3	19	200	16.42	0.00	6.53	0.329	5	0.84	12.7	-83.9	Clear	None
10:50	3	22	200	16.42	0.00	6.54	0.33	2.4	0.81	12.8	-85.2	Clear	None
10:55	5	27	200	16.42	0.00	6.55	0.334	2.1	0.79	12.8	-86.3	Clear	None
10:58	3	30	200	16.42	0.00	6.56	0.339	2.1	0.76	12.8	-87.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-01	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	54.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	3.41	Total Depth (ft-bmp)	52.31	Water Column(ft)	48.9
MP Elevation		Pump Intake (ft-bmp)	45	Purge Method	Low-Flow
Sample Time	11:05	Volumes Purged	0.14	Sample ID	SHM-13-01-FAL20
Purge Start	10:25	Gallons Purged	1.14	Replicate/ Code No.	
Purge End	11:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:30	0	0	140	3.42	0.18	6.42	4.639	3.61	4.94	11.5	154.2	Clear	None
10:35	5	5	120	3.42	0.34	6.01	4.756	3.62	4.35	11.7	213.9	Clear	None
10:40	5	10	100	3.42	0.48	5.76	4.714	3.13	4.39	11.7	215.9	Clear	None
10:45	5	15	100	3.42	0.61	5.71	4.726	2.81	4.29	11.7	223.2	Clear	None
10:50	5	20	100	3.42	0.74	5.7	4.726	3.01	4.26	11.8	227.3	Clear	None
10:55	5	25	100	3.42	0.87	5.69	4.689	2.95	4.26	11.8	230.1	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Organic Carbon	250 mL Amber	1	H2SO4
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride, Sulfate	125 mL Plastic	1	None

Comments: Initial purge appearance - clear; initial purge odor - none

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-05-42A	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	32.0 degrees F and Clear. The wind is blowing W/NW at 29.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	5.93	Total Depth (ft-bmp)	44.27	Water Column(ft)	38.34
MP Elevation		Pump Intake (ft-bmp)	41	Purge Method	Low-Flow
Sample Time	13:10	Volumes Purged		Sample ID	SHM-05-42A-FAL20
Purge Start	12:26	Gallons Purged		Replicate/ Code No.	
Purge End	13:15			Sampled by	Connor Rosenbaum

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:26	0	0	200	5.98	0.00	7.2	0.061	4.1	3	13.3	130	Clear	None
12:30	4	4	200	5.98	0.00	6.35	0.058	5.8	1.26	12.6	147.9	Clear	None
12:34	4	8	200	5.98	0.00	5.96	0.057	12.1	0.97	12.6	159.5	Clear	None
12:38	4	12	200	5.98	0.00	5.8	0.057	25.7	0.87	12.2	167	Clear	None
12:42	4	16	200	5.98	0.00	5.68	0.064	40.3	0.79	12.3	171.6	Clear	None
12:45	3	19	200	5.98	0.00	5.65	0.067	29.4	0.75	12.2	172	Clear	None
12:48	3	22	200	5.98	0.00	5.64	0.067	22.9	0.73	12.4	172.6	Clear	None
12:51	3	25	200	5.98	0.00	5.64	0.067	15.6	0.7	12.3	173.1	Clear	None
12:54	3	28	200	5.98	0.00	5.64	0.067	15.5	0.69	12.1	174	Clear	None
12:57	3	31	200	5.98	0.00	5.63	0.067	15.6	0.68	12.2	175.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-10	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	73.9 degrees F and Clear. The wind is blowing W/NW at 29.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5
Static Water Level (ft-bmp)	11.06	Total Depth (ft-bmp)	67.31	Water Column(ft)	56.25
MP Elevation		Pump Intake (ft-bmp)	62.31	Purge Method	Low-Flow
Sample Time	13:10	Volumes Purged	0.22	Sample ID	SHM-10-10-FAL20
Purge Start	12:27	Gallons Purged	1.14	Replicate/ Code No.	
Purge End	13:10				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:35	0	0	100	11.07	0.21	6.32	4.698	2.78	0.84	16.8	239.1	Clear	None
12:40	5	5	100	11.08	0.34	6.33	4.828	2.79	0.49	16.9	233.8	Clear	None
12:45	5	10	100	11.08	0.48	6.33	4.922	2.79	0.4	16.8	229.7	Clear	None
12:50	5	15	100	11.08	0.61	6.33	5.017	2.52	0.35	16.9	223.7	Clear	None
12:55	5	20	100	11.08	0.74	6.33	5.051	2.52	0.32	16.8	219.8	Clear	None
13:00	5	25	100	11.08	0.87	6.33	5.087	2.55	0.32	16.9	215.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Lock cut off during gauging event on 11/04/2020 - needs replacement.

Initial purge appearance - clear; initial purge odor - none.

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival:
Condition of Well: Good condition,Missing lock	Well Locked at Departure:
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHM-05-42B	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	75.9 degrees F and Clear. The wind is blowing W/NW at 29.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	6	Total Depth (ft-bmp)	73.38	Water Column(ft)	67.38
MP Elevation		Pump Intake (ft-bmp)	70	Purge Method	Low-Flow
Sample Time	14:15	Volumes Purged		Sample ID	SHM-05-42B-FAL20
Purge Start	13:42	Gallons Purged		Replicate/ Code No.	
Purge End	14:30			Sampled by	Connor Rosenbaum

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:43	0	0	200	6.05	0.00	6.82	0.145	8.8	5.8	14.4	23.5	Clear	None
13:46	3	3	200	6.05	0.00	6.32	0.228	28.5	1.44	12.9	-15.8	Clear	None
13:51	5	8	200	6.05	0.00	6.28	0.248	23.8	0.99	12.5	-19.5	Clear	None
13:54	3	11	200	6.05	0.00	6.23	0.271	10.6	0.86	12.5	-2.04	Clear	None
13:57	3	14	200	6.05	0.00	6.22	0.281	8.2	0.82	12.3	-20.9	Clear	None
14:01	4	18	200	6.05	0.00	6.21	0.293	6.2	0.77	12.3	-22.3	Clear	None
14:05	4	22	200	6.05	0.00	6.21	0.295	6.1	0.74	12.1	-23.8	Clear	None
14:08	3	25	200	6.05	0.00	6.22	0.296	6.3	0.72	12.1	-24.5	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-06	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	75.9 degrees F and Clear. The wind is blowing W/NW at 29.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	17.72	Total Depth (ft-bmp)	45.53	Water Column(ft)	27.81
MP Elevation		Pump Intake (ft-bmp)	40.77	Purge Method	Low-Flow
Sample Time	15:20	Volumes Purged	0.43	Sample ID	SHM-13-06-FAL20
Purge Start	13:58	Gallons Purged	1.95	Replicate/ Code No.	
Purge End	15:20				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:05	0	0	90	17.75	0.17	6.64	4.811	35.32	0.8	16.7	-3.2	Clear	None
14:10	5	5	90	17.75	0.29	6.73	4.896	22.63	0.34	16.8	-46.2	Clear	None
14:15	5	10	90	17.75	0.40	6.8	4.922	19.27	0.19	16.9	-74.5	Clear	None
14:20	5	15	90	17.75	0.52	6.83	4.903	31.03	0.14	16.8	-88.7	Clear	None
14:25	5	20	90	17.75	0.64	6.84	4.88	29.73	0.13	16.7	-96.9	Clear	None
14:30	5	25	90	17.75	0.76	6.85	4.916	24.97	0.1	16.8	-104.5	Clear	None
14:35	5	30	90	17.75	0.87	6.83	4.951	25.39	0.08	16.6	-110.1	Clear	None
14:40	5	35	90	17.75	1.00	6.83	4.973	20.21	0.08	16.3	-115.7	Clear	None
14:45	5	40	90	17.75	1.12	6.84	4.952	20.18	0.07	16	-119.4	Clear	None
14:50	5	45	90	17.75	1.24	6.85	4.992	19.85	0.06	16.1	-122.7	Clear	None
14:55	5	50	90	17.75	1.36	6.85	4.994	18.63	0.06	16.2	-125.9	Clear	None
15:00	5	55	90	17.75	1.47	6.86	5.001	15.62	0.06	16.2	-129.2	Clear	None
15:05	5	60	90	17.75	1.59	6.86	5.002	14.61	0.06	16.2	-129.8	Clear	None
15:10	5	65	90	17.75	1.71	6.86	4.999	14.23	0.06	16.1	-131.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Initial purge appearance - mostly clear with slight grey haze; initial purge odor - none

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Information

Well Location:	_____	Well Locked at Arrival:	_____
Condition of Well:	Good condition	Well Locked at Departure:	_____
Well Completion:	Flush mount	Key Number To Well:	NA
	_____		_____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHL-5	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	75.9 degrees F and Clear. The wind is blowing W/NW at 29.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	6.35	Total Depth (ft-bmp)	13.75	Water Column(ft)	7.4
MP Elevation		Pump Intake (ft-bmp)	10	Purge Method	Low-Flow
Sample Time	15:45	Volumes Purged		Sample ID	SHL-5-FAL20
Purge Start	15:04	Gallons Purged		Replicate/ Code No.	
Purge End	16:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:08	0	0	200	6.6	0.00	6.55	0.081	11.7	1.77	15.3	75.4	Clear	None
15:11	3	3	200	6.65	0.00	6.16	0.079	21.5	1.1	15.1	82	Clear	None
15:16	5	8	200	6.65	0.00	5.93	0.077	43.5	0.84	14.8	92.9	Clear	None
15:20	4	12	200	6.65	0.00	5.82	0.078	22	0.85	14.8	99	Clear	None
15:24	4	16	200	6.65	0.00	5.79	0.078	24.3	0.85	14.6	97.7	Clear	None
15:30	6	22	200	6.7	0.00	5.77	0.08	30.9	0.84	15.3	97.9	Clear	None
15:34	4	26	200	6.7	0.00	5.78	0.08	32.1	0.84	15.3	95.5	Clear	None
15:37	3	29	200	6.7	0.00	5.77	0.081	33.1	0.85	15.1	92.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHL-10 Date 11/09/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	31.2	Total Depth (ft-bmp)	38.5	Water Column(ft)	7.3
Gallons in Well	1.19				
MP Elevation		Pump Intake (ft-bmp)	35	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	12:00	Volumes Purged	2.82	Sample ID	SHL-10-FAL20
Sampled by	Diane Champagne				
Purge Start	10:50	Gallons Purged	3.36	Replicate/ Code No.	
Purge End	12:13				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:00	0	0	180	31.2	0.00	9.18	0.109	30.85	3.77	15.9	82.6	Clear	None
11:05	5	5	180	31.2	0.00	8.91	0.064	33.41	2.77	15.8	94.2	Clear	None
11:10	5	10	180	31.21	0.00	8.88	0.051	34.82	2.4	15.8	99.6	Clear	None
11:15	5	15	180	31.22	0.00	8.83	0.048	35.44	2.31	15.8	101.5	Clear	None
11:20	5	20	180	31.21	0.00	8.74	0.045	35.35	2.17	15.9	105.1	Clear	None
11:25	5	25	180	31.21	0.00	8.58	0.045	11.32	2.18	16	110.7	Clear	None
11:30	5	30	180	31.22	0.00	8.49	0.045	1.41	2.18	16.2	113.3	Clear	None
11:36	6	36	180	31.21	0.00	8.43	0.044	1.53	2.19	16.3	115.2	Clear	None
11:40	4	40	180	31.21	0.00	8.37	0.045	1.62	2.24	16.3	116.3	Clear	None
11:45	5	45	180	31.22	0.00	8.31	0.045	1.55	2.23	16.3	117.8	Clear	None
11:50	5	50	180	31.21	0.00	8.22	0.044	1.65	2.26	16.7	120.6	Clear	None
11:55	5	55	180	31.22	0.00	8.24	0.044	1.53	2.27	16.3	120.3	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: On the hill near the sand dunes

Well Locked at Arrival: yes

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Condition of Well: Good condition

Well Locked at Departure: yes

Well Completion: Flush mount

Key Number To Well: 4753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-3	Date	11/09/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	30.64	Total Depth (ft-bmp)	35.5	Water Column(ft)	4.86
Gallons in Well	0.79				
MP Elevation		Pump Intake (ft-bmp)	34	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	15:25	Volumes Purged	4.68	Sample ID	SHL-3-FAL20
Sampled by					
Purge Start	14:15	Gallons Purged	3.70	Replicate/ Code No.	
Purge End	15:39				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:20	0	0	200	30.64	0.00	8.94	0.146	8.38	6.38	20.4	65	Clear	None
14:25	5	5	200	30.64	0.00	8.35	0.141	10.36	5.27	19.1	85.3	Clear	None
14:33	8	13	200	30.66	0.00	7.98	0.139	10.07	3.48	18.9	101.4	Clear	None
14:36	3	16	200	30.67	0.00	7.89	0.139	4.72	5.36	19.1	104.7	Clear	None
14:40	4	20	200	30.67	0.00	7.76	0.139	2.09	3.72	18.1	112.7	Clear	None
14:45	5	25	200	30.67	0.00	7.74	0.139	2.72	3.71	17.9	113.2	Clear	None
14:50	5	30	200	30.67	0.00	7.72	0.139	1.16	3.92	17.9	116.9	Clear	None
14:55	5	35	200	30.67	0.00	7.68	0.138	1.49	4.27	17	120.7	Clear	None
15:01	6	41	200	30.67	0.00	7.64	0.138	1.22	4.5	16.4	122.9	Clear	None
15:05	4	45	200	30.67	0.00	7.65	0.138	1.24	4.61	16.2	124.4	Clear	None
15:10	5	50	200	30.67	0.00	7.62	0.138	1.26	3.65	15.9	127.1	Clear	None
15:15	5	55	200	30.67	0.00	7.59	0.137	1.38	3.83	16.1	129.2	Clear	None
15:20	5	60	200	30.67	0.00	7.58	0.136	1.12	3.91	16.1	129.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Well Location:	On the sand hill	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-96-5B	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	46.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	7.8	Total Depth (ft-bmp)	88.75	Water Column(ft)	80.95
MP Elevation		Pump Intake (ft-bmp)	85	Purge Method	Low-Flow
Sample Time	09:40	Volumes Purged		Sample ID	SHM-96-5B-FAL20
Purge Start	09:12	Gallons Purged		Replicate/ Code No.	SHL-DUP08-FAL20
Purge End	10:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:14	0	0	200	7.7	0.00	7.67	0.296	20	5.4	12.3	161.5	Brown	None
09:17	3	3	200	7.73	0.00	6.81	0.308	120.9	2.73	11.9	45	Brown	None
09:21	4	7	200	7.73	0.00	6.31	0.316	130	1.52	11.7	20.1	Brown	None
09:24	3	10	200	7.73	0.00	6.17	0.322	93.6	1.2	11.9	13.3	Brown	None
09:27	3	13	200	7.73	0.00	6.13	0.32	124	1.08	11.7	9.6	Brown	None
09:31	4	17	200	7.73	0.00	6.14	0.32	123	1.09	11.7	6.3	Brown	None
09:35	4	21	200	7.73	0.00	6.17	0.324	124	1.07	12	2.6	Brown	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-08	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	57.9 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5
Static Water Level (ft-bmp)	9.94	Total Depth (ft-bmp)	57.21	Water Column(ft)	47.27
MP Elevation		Pump Intake (ft-bmp)	52.21	Purge Method	Low-Flow
Sample Time	10:25	Volumes Purged	0.29	Sample ID	SHM-10-08
Purge Start	09:39	Gallons Purged	1.25	Replicate/ Code No.	
Purge End	10:25				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:45	0	0	125	9.94	0.20	6.69	0.688	7.42	0.62	13.7	97.3	Clear	None
09:50	5	5	100	9.95	0.33	6.53	0.66	5.62	0.53	14.2	114.8	Clear	None
09:55	5	10	100	9.95	0.46	6.48	0.646	5.43	0.53	14.1	117.3	Clear	None
10:00	5	15	100	9.95	0.59	6.45	0.645	4.56	0.45	14.3	117	Clear	None
10:05	5	20	100	9.95	0.73	6.45	0.648	4.67	0.37	14.4	114.8	Clear	None
10:10	5	25	100	9.95	0.86	6.45	0.654	4.83	0.36	14.6	113.6	Clear	None
10:15	5	30	100	9.95	0.99	6.46	0.656	4.65	0.36	14.7	113.2	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Initial purge appearance - clear; initial purge odor - none

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Flush mount	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-96-5C	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	32.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	7.07	Total Depth (ft-bmp)	80	Water Column(ft)	72.93
MP Elevation		Pump Intake (ft-bmp)	77	Purge Method	Low-Flow
Sample Time	10:50	Volumes Purged		Sample ID	SHM-96-5C-FAL20
Purge Start	10:28	Gallons Purged		Replicate/ Code No.	
Purge End	11:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:29	0	0	200	7.07	0.00	6.53	0.331	17	1.02	12.7	8	Clear	None
10:32	3	3	200	7.07	0.00	6.4	0.33	14.8	0.85	12.8	8.9	Clear	None
10:35	3	6	200	7.07	0.00	6.32	0.333	12.9	0.75	13	9.3	Clear	None
10:38	3	9	200	7.07	0.00	6.29	0.334	13.4	0.72	13	8.8	Clear	None
10:41	3	12	200	7.07	0.00	6.27	0.335	12.6	0.69	13.1	8.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: M1

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-5A	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	70.0 degrees F and Clear. The wind is blowing undefined at 12.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	9.01	Total Depth (ft-bmp)	27.43	Water Column(ft)	18.42
MP Elevation		Pump Intake (ft-bmp)	24	Purge Method	Low-Flow
Sample Time	12:10	Volumes Purged		Sample ID	EPA-PZ-2012-5A-FAL20
Purge Start	11:40	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	12:20			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:42	0	0	200	9.05	0.00	7.5	0.076	8.5	2.3	14.3	126.5	Clear	None
11:46	4	4	200	9.05	0.00	5.87	0.078	27.2	0.79	13.2	110.7	Clear	None
11:50	4	8	200	9.05	0.00	5.58	0.081	26.5	0.7	13.1	107.8	Clear	None
11:54	4	12	200	9.05	0.00	5.47	0.082	20	0.66	13	106.6	Clear	None
11:57	3	15	200	9.05	0.00	5.41	0.081	16.3	0.64	12.9	105.8	Clear	None
12:00	3	18	200	9.05	0.00	5.39	0.081	12.1	0.62	13	105	Clear	None
12:04	4	22	200	9.05	0.00	5.38	0.081	12	0.6	12.9	103.3	Clear	None
12:07	3	25	200	9.05	0.00	5.37	0.081	12.1	0.59	13.1	102.5	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: M15 _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-5B	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	70.0 degrees F and Clear. The wind is blowing undefined at 12.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	8.28	Total Depth (ft-bmp)	85.82	Water Column(ft)	77.54
MP Elevation		Pump Intake (ft-bmp)	82	Purge Method	Low-Flow
Sample Time	13:20	Volumes Purged		Sample ID	EPA-PZ-2012-5B-FAL20
Purge Start	12:45	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	13:30			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:50	0	0	200	8.35	0.00	6.49	0.347	76	1.92	14.8	51.6	Clear	None
12:53	3	3	200	8.35	0.00	6.2	0.335	52.4	1.32	13.9	62.2	Clear	None
12:56	3	6	200	8.35	0.00	6.18	0.332	35	1.1	13.6	67	Clear	None
12:59	3	9	200	8.35	0.00	6.17	0.333	27	0.97	13.5	69.8	Clear	None
13:03	4	13	200	8.35	0.00	6.15	0.332	19.6	0.92	13.3	72.2	Clear	None
13:06	3	16	200	8.35	0.00	6.15	0.333	15.8	0.88	13.3	73.4	Clear	None
13:10	4	20	200	8.35	0.00	6.16	0.333	10	0.85	13.3	73.6	Clear	None
13:14	4	24	200	8.35	0.00	6.16	0.334	9.7	0.84	13.3	74.4	Clear	None
13:17	3	27	200	8.35	0.00	6.17	0.333	9.6	0.82	13.2	74.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: M15

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHL-8D Date 11/10/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		73.9 degrees F and Clear. The wind is blowing SW at 33.0 mph.	
Measuring Pt. Description		Top of Inner Casing		Screen Setting (ft-bmp)		--	
Casing Diameter (in)		2		Well Casing Material		PVC	
Static Water Level (ft-bmp)		8.42		Total Depth (ft-bmp)		68.25	
Water Column(ft)		59.83		Gallons in Well		9.72	
MP Elevation		Pump Intake (ft-bmp)		65		Purge Method Low-Flow	
Sample Time		14:35		Volumes Purged		Sample ID SHL-8D-FAL20	
Purge Start		14:04		Gallons Purged		Replicate/ Code No.	
Purge End		14:40					

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:08	0	0	200	8.53	0.00	6.78	0.16	3.3	2.15	14.4	90.6	Clear	Strong
14:12	4	4	200	8.53	0.00	6.32	0.158	3.5	1.01	14.3	92.7	Clear	Strong
14:15	3	7	200	8.53	0.00	6.13	0.158	3.1	0.81	14.1	92.6	Clear	Strong
14:18	3	10	200	8.53	0.00	6.06	0.158	2.3	0.75	14.4	91.8	Clear	Strong
14:21	3	13	200	8.53	0.00	5.99	0.156	2.4	0.71	13.9	91.1	Clear	Strong
14:25	4	17	200	8.53	0.00	5.96	0.155	2.1	0.68	14	90	Clear	Strong
14:28	3	20	200	8.53	0.00	5.94	0.154	2	0.66	13.9	89	Clear	Strong

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments: No lock

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHL-8S Date 11/10/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)		75.0 degrees F and Clear. The wind is blowing SW at 33.0 mph.	
Measuring Pt. Description		Top of Inner Casing		Screen Setting (ft-bmp)		--	
Casing Diameter (in)		2		Well Casing Material		PVC	
Static Water Level (ft-bmp)		8.47		Total Depth (ft-bmp)		56.16	
Water Column(ft)		47.69		Gallons in Well		7.75	
MP Elevation		Pump Intake (ft-bmp)		53		Purge Method Low-Flow	
Sample Time		15:35		Volumes Purged		Sample ID SHL-8S-FAL20	
Purge Start		14:54		Gallons Purged		Replicate/ Code No.	
Purge End		15:45					

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:58	0	0	200	8.88	0.00	7.15	0.068	3	5.53	14.3	100.7	Clear	None
15:01	3	3	200	9.05	0.00	6.57	0.067	3.2	4.31	13.4	120.4	Clear	None
15:05	4	7	200	9.08	0.00	6.32	0.067	3.6	4.18	13.8	131.3	Clear	None
15:07	2	9	200	9.1	0.00	6.21	0.067	2.2	4.14	13.9	138	Clear	None
15:10	3	12	200	9.05	0.00	6.13	0.067	2.4	4.12	14	144.8	Clear	None
15:13	3	15	200	9.05	0.00	6.08	0.067	2	4.07	14	149.3	Clear	None
15:17	4	19	200	9.05	0.00	6.02	0.067	2.5	4.06	13.7	155.7	Clear	None
15:20	3	22	200	9.05	0.00	6	0.066	2.2	4.07	13.3	160.3	Clear	None
15:23	3	25	200	9.05	0.00	5.98	0.066	2.3	4.07	13.3	162.5	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-02	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	68.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5
Static Water Level (ft-bmp)	18.51	Total Depth (ft-bmp)	64.85	Water Column(ft)	46.34
MP Elevation		Pump Intake (ft-bmp)	59.85	Purge Method	Low-Flow
Sample Time	12:00	Volumes Purged	0.34	Sample ID	SHM-10-02-FAL20
Purge Start	11:07	Gallons Purged	1.44	Replicate/ Code No.	
Purge End	12:00				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:15	0	0	120	18.53	0.25	6.54	0.607	10.95	1.11	15.7	132.4	Clear	None
11:20	5	5	100	18.53	0.39	6.45	0.629	7.77	0.55	15.3	122.5	Clear	None
11:25	5	10	100	18.53	0.52	6.43	0.629	6.05	0.47	15.4	116.7	Clear	None
11:30	5	15	100	18.53	0.65	6.42	0.621	5.18	0.4	15	112	Clear	None
11:35	5	20	100	18.53	0.78	6.42	0.617	4.83	0.35	14.8	107.5	Clear	None
11:40	5	25	100	18.53	0.91	6.41	0.608	4.37	0.28	14.4	104.5	Clear	None
11:45	5	30	100	18.53	1.05	6.4	0.609	4.43	0.29	14.8	101.2	Clear	None
11:50	5	35	100	18.53	1.18	6.4	0.608	4.02	0.28	14.8	100.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Initial purge appearance - clear; initial purge odor - none

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-03	Date	11/10/2020		
Project Name/Location	Devens, Massachusetts		Weather(°F)	73.0 degrees F and Clear. The wind is blowing SW at 29.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	27.15	Total Depth (ft-bmp)	70.12	Water Column(ft)	42.97	Gallons in Well	3.93
MP Elevation		Pump Intake (ft-bmp)	65.12	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	13:40	Volumes Purged	0.42	Sample ID	SHM-10-03-FAL20	Sampled by	Desmond Bedard
Purge Start	12:49	Gallons Purged	1.66	Replicate/ Code No.			
Purge End	13:40						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:55	0	0	150	27.17	0.24	6.93	0.57	12.92	1.91	15.3	134	Clear	None
13:00	5	5	120	27.17	0.40	6.86	0.593	9.48	1.02	16.2	131.6	Clear	None
13:05	5	10	120	27.17	0.55	6.86	0.61	11.11	0.92	16.7	124.1	Clear	None
13:10	5	15	120	27.17	0.71	6.92	0.611	9.97	0.73	16.7	116.1	Clear	None
13:15	5	20	120	27.17	0.87	6.81	0.608	10.51	0.63	16.6	106.7	Clear	None
13:20	5	25	120	27.17	1.03	6.81	0.608	9.78	0.56	16.6	102.4	Clear	None
13:25	5	30	120	27.17	1.19	6.8	0.601	9.56	0.56	16.2	94.2	Clear	None
13:30	5	35	120	27.17	1.35	6.8	0.598	9.84	0.52	16.5	93.5	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Initial purge appearance - clear; initial purge odor - none.

NOTE: Adjacent WWTP was in the process of transporting its waste sludge off site during purge; strong waster sludge odor was present in the air.

Well Casing Volume Conversion
Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information	
Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-13-08	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	75.0 degrees F and Clear. The wind is blowing SW at 33.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	20.66	Total Depth (ft-bmp)	65.74	Water Column(ft)	45.08
MP Elevation		Pump Intake (ft-bmp)	60.74	Purge Method	Low-Flow
Sample Time	16:05	Volumes Purged	0.18	Sample ID	SHM-13-08-FAL20
Purge Start	15:14	Gallons Purged	1.35	Replicate/ Code No.	
Purge End	16:05				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:20	0	0	100	20.67	0.16	6.49	0.537	23.12	1.27	17.1	-82.4	Clear	None
15:25	5	5	100	20.67	0.29	6.5	0.598	18.99	0.45	17.4	-94.2	Clear	None
15:30	5	10	100	20.67	0.42	6.52	0.624	18.92	0.39	18.1	-103.5	Clear	None
15:35	5	15	100	20.67	0.55	6.53	0.635	16.58	0.34	18.9	-109.5	Clear	None
15:40	5	20	100	20.67	0.69	6.53	0.627	15.33	0.3	18.2	-115.4	Clear	None
15:45	5	25	100	20.67	0.82	6.54	0.625	15.14	0.27	18.1	-117.6	Clear	None
15:50	5	30	100	20.67	0.95	6.55	0.619	15.62	0.27	18.1	-118.7	Clear	None
15:55	5	35	100	20.67	1.08	6.55	0.612	15.87	0.27	18	-119.5	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Initial purge appearance - clear; initial purge odor - none.

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival:
Condition of Well: Good condition,Missing bolts	Well Locked at Departure:
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-07	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	28.01	Total Depth (ft-bmp)	50	Water Column(ft)	21.99
Gallons in Well	3.57				
MP Elevation		Pump Intake (ft-bmp)	45	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	16:20	Volumes Purged	0.97	Sample ID	SHM-20-07-FAL20
Sampled by					
Purge Start	15:01	Gallons Purged	3.45	Replicate/ Code No.	
Purge End	16:41				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:05	0	0	175	28.01	0.00	8.02	0.623	103.52	0.98	14.3	25.5	Gray	None
15:11	6	6	175	28.01	0.00	7.86	0.63	11.11	0.79	1.2	7.8	Gray	None
15:20	9	15	175	28.01	0.00	7.81	0.633	8.7	0.68	14.4	-10.6	Gray	None
15:24	4	19	175	28	0.00	7.79	0.639	5.65	0.65	13.8	-16	Gray	None
15:31	7	26	175	27.99	0.00	7.77	0.642	7.22	0.57	13.9	-23.1	Gray	None
15:35	4	30	175	27.99	0.00	7.77	0.646	8.07	0.55	13.5	-26.4	Gray	None
15:40	5	35	175	27.99	0.00	7.76	0.643	6.05	0.52	13.3	-32.4	Gray	None
15:45	5	40	175	27.99	0.00	7.75	0.643	4.19	0.47	13.4	-34.9	Gray	None
15:50	5	45	175	27.99	0.00	7.75	0.643	4.43	0.47	13.3	-37.1	Gray	None
15:55	5	50	175	27.99	0.00	7.75	0.645	5.77	0.47	13	-38.7	Gray	None
16:00	5	55	175	27.99	0.00	7.75	0.642	6.03	0.44	12.9	-40.9	Gray	None
16:05	5	60	175	27.99	0.00	7.74	0.644	5.56	0.41	12.7	-45.3	Gray	None
16:10	5	65	175	27.99	0.00	7.74	0.644	5.27	0.41	12.7	-45.4	Gray	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Amber	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Well Location:	Field	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-14	Date	11/10/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	67 °, Sunny, NE winds at 7 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	21.11	Total Depth (ft-bmp)	80	Water Column(ft)	58.89
Gallons in Well	9.57				
MP Elevation		Pump Intake (ft-bmp)	70	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	12:25	Volumes Purged	0.44	Sample ID	SHM-10-14-FAL20
Sampled by	Diane Champagne				
Purge Start	11:05	Gallons Purged	4.23	Replicate/ Code No.	
Purge End	12:38				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:10	0	0	200	21.11	0.00	7.57	0.685	81.62	3.1	14.4	81.1	Silty grey	None
12:55	105	105	200	21.12	0.00	7.49	0.686	117.59	2.31	14.8	68.1	Silty grey	None
11:20	5	10	200	21.12	0.00	7.44	0.685	76.07	1.83	14.7	54.2	Silty grey	None
11:27	7	17	200	21.13	0.00	7.42	0.685	87.07	1.59	14.4	46.6	Silty grey	None
11:30	3	20	200	21.13	0.00	7.42	0.686	80.97	1.51	14.5	44.3	Silty grey	None
11:36	6	26	200	21.13	0.00	7.41	0.685	96.47	1.21	14.6	36.5	Silty grey	None
11:40	4	30	200	21.13	0.00	7.4	0.683	172.85	1.16	14.6	31.8	Silty grey	None
11:45	5	35	200	21.13	0.00	7.39	0.682	125.35	1.02	14.8	26.3	Silty grey	None
11:50	5	40	200	21.13	0.00	7.38	0.681	127.91	1.01	14.9	24.5	Silty grey	None
11:55	5	45	200	21.13	0.00	7.37	0.682	110.21	0.96	14.7	21.4	Silty grey	None
12:00	5	50	200	21.13	0.00	7.37	0.681	92.71	0.91	14.7	18.4	Silty grey	None
12:05	5	55	200	21.13	0.00	7.36	0.678	87.44	0.86	14.7	15.9	Silty grey	None
12:11	6	61	200	21.13	0.00	7.35	0.677	81.56	0.82	14.4	13.3	Silty grey	None
12:16	5	66	200	21.13	0.00	7.34	0.678	77.31	0.79	14.4	11.6	Silty grey	None
12:20	4	70	200	21.13	0.00	7.33	0.677	76.94	0.77	14.4	10	Silty grey	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Dissolved Organic Carbon	250 mL Amber	1	H2SO4
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfide	125 mL Plastic	1	None

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Middle of field	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-01-36X	Date	11/11/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	59.0 degrees F and Cloudy. The wind is blowing S/SE at 12.1 mph.	
Measuring Pt. Description	Top of Outer Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	7.28	Total Depth (ft-bmp)	12.96	Water Column(ft)	5.68
MP Elevation		Pump Intake (ft-bmp)	9	Purge Method	Low-Flow
Sample Time	09:45	Volumes Purged		Sample ID	SHP-01-36X-FAL20
Purge Start	09:00	Gallons Purged		Replicate/ Code No.	
Purge End	09:55			Sampled by	Connor Rosenbaum

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:03	0	0	200	7.31	0.00	7.81	0.267	30	2.01	13.7	74.4	Clear	None
09:06	3	3	200	7.31	0.00	7.53	0.252	30	1.4	13.5	65	Clear	None
09:09	3	6	200	7.31	0.00	7.26	0.242	30	1.25	13.2	53.2	Clear	None
09:12	3	9	200	7.31	0.00	7.06	0.236	20	1.2	13	50.6	Clear	None
09:16	4	13	200	7.31	0.00	6.84	0.233	16.2	1.12	13.1	49.8	Clear	None
09:19	3	16	200	7.31	0.00	6.73	0.232	11.5	1.06	13.2	48.5	Clear	None
09:23	4	20	200	7.31	0.00	6.61	0.231	6.8	1.01	13.4	48.1	Clear	None
09:26	3	23	200	7.31	0.00	6.54	0.23	5.1	1.06	13.4	48.7	Clear	None
09:29	3	26	200	7.31	0.00	6.47	0.23	3.7	1.07	13.3	50.3	Clear	None
09:33	4	30	200	7.31	0.00	6.42	0.227	3.4	1	13.5	49.5	Clear	None
09:36	3	33	200	7.31	0.00	6.42	0.232	2.7	0.97	13.6	46.3	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition,Missing lock	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-01-37X		Date	11/11/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	69.1 degrees F and Cloudy. The wind is blowing W/SW at 41.1 mph.			
Measuring Pt. Description	Top of Outer Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1	Well Casing Material	Stainless Steel
Static Water Level (ft-bmp)	5.98	Total Depth (ft-bmp)	11.05	Water Column(ft)	5.07	Gallons in Well	0.21
MP Elevation		Pump Intake (ft-bmp)	8	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	11:10	Volumes Purged		Sample ID	SHP-01-37X-FAL20	Sampled by	Connor Rosenbaum
Purge Start	10:39	Gallons Purged		Replicate/ Code No.			
Purge End	11:20						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:44	0	0	200	6.02	0.00	7.39	0.281	13.4	4.35	15.6	58.6	Clear	None
10:47	3	3	200	6.02	0.00	7.22	0.267	9.7	3.91	15.1	67.1	Clear	None
10:51	4	7	200	6.02	0.00	7.02	0.258	6	3.51	15	57	Clear	None
10:57	6	13	200	6.02	0.00	6.84	0.251	5.1	3.36	15.2	50	Clear	None
11:01	4	17	200	6.02	0.00	6.75	0.25	4	3.37	15.2	46.3	Clear	None
11:05	4	21	200	6.02	0.00	6.69	0.248	3.4	3.36	15.4	45.1	Clear	None
11:08	3	24	200	6.02	0.00	6.66	0.247	3.2	3.38	15.4	44.9	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-01-38A	Date	11/11/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	71.1 degrees F and Mostly Cloudy. The wind is blowing S/SW at 45.9 mph.	
Measuring Pt. Description	Top of Outer Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	3.95	Total Depth (ft-bmp)	9.13	Water Column(ft)	5.18
MP Elevation		Pump Intake (ft-bmp)	6	Purge Method	Low-Flow
Sample Time	12:30	Volumes Purged		Sample ID	SHP-01-38A-FAL20
Purge Start	11:58	Gallons Purged		Replicate/ Code No.	SHL-DUP04-FAL20
Purge End	12:50				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:01	0	0	200	3.98	0.00	6.34	0.199	125	2.88	15.3	31.7	Clear	None
12:04	3	3	200	3.98	0.00	6.02	0.201	106.1	1.74	15.3	29.9	Clear	None
12:07	3	6	200	3.98	0.00	5.92	0.2	49.5	1.46	15	30	Clear	None
12:10	3	9	200	3.98	0.00	5.87	0.197	30.7	1.27	15.1	28.5	Clear	None
12:14	4	13	200	3.98	0.00	5.83	0.195	19.5	1.12	15	31.1	Clear	None
12:17	3	16	200	3.98	0.00	5.82	0.194	13.4	1.05	15	31.1	Clear	None
12:20	3	19	200	3.98	0.00	5.81	0.193	7.8	0.96	15.1	30.5	Clear	None
12:23	3	22	200	3.98	0.00	5.82	0.193	7.5	0.92	15.1	29.4	Clear	None
12:26	3	25	200	3.98	0.00	5.82	0.191	7.1	0.88	15	29.6	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-93-10D	Date	11/11/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	72.0 degrees F and Mostly Cloudy. The wind is blowing S/SW at 54.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	30.7	Total Depth (ft-bmp)	57.8	Water Column(ft)	27.1
MP Elevation		Pump Intake (ft-bmp)	54	Purge Method	Low-Flow
Sample Time	14:50	Volumes Purged		Sample ID	SHM-93-10D-FAL20
Purge Start	14:07	Gallons Purged		Sampled by	Connor Rosenbaum
Purge End	15:10			Replicate/ Code No.	

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:10	0	0	200	30.94	0.00	10.66	0.233	22.3	1.32	18	-114.5	Clear	None
14:13	3	3	200	31.02	0.00	10.92	0.238	10.6	1.12	18	-122.5	Clear	None
14:17	4	7	200	31.12	0.00	11.03	0.229	18.8	1.03	18.2	-126.2	Clear	None
14:22	5	12	200	31.22	0.00	11.05	0.263	25.9	1	18.6	-125.6	Clear	None
14:25	3	15	200	31.27	0.00	11.07	0.257	16	0.97	18.7	-124.4	Clear	None
14:30	5	20	200	31.35	0.00	11.09	0.269	17.3	0.98	18.7	-123.5	Clear	None
14:33	3	23	200	31.4	0.00	11.11	0.269	20.7	1	19	-123.9	Clear	None
14:36	3	26	200	31.43	0.00	11.13	0.267	16	1.04	19.1	-122.9	Clear	None
14:40	4	30	200	31.43	0.00	11.17	0.269	15.5	1.07	19.2	-122.3	Clear	None
14:43	3	33	200	31.51	0.00	11.19	0.275	15.7	1.08	19.4	-122	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: M1 _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-07-03	Date	11/11/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	59.0 degrees F and Cloudy. The wind is blowing S/SE at 12.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	20.55	Total Depth (ft-bmp)	35	Water Column(ft)	14.45
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
Sample Time	10:20	Volumes Purged	0.99	Sample ID	SHM-07-03-FAL20
Purge Start	09:10	Gallons Purged	2.32	Replicate/ Code No.	
Purge End	10:33				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:25	0	0	120	21.4	0.00	7.59	1.491	35.17	9.45	13.2	87.7	Brown	
09:30	5	5	120	21.4	0.00	7.26	1.488	33.96	9.25	13.4	96.6	Brown	
09:35	5	10	120	21.4	0.00	6.91	1.497	29.19	8.99	13.5	109.1	Brown	
09:40	5	15	120	21.4	0.00	6.61	1.465	15.96	7.89	13.7	119.9	Brown	
09:46	6	21	120	21.4	0.00	6.38	1.424	12.86	8.06	13.7	127.3	Brown	
09:50	4	25	120	21.39	0.00	6.25	1.381	12.5	7.86	13.7	131.2	Brown	
09:56	6	31	120	21.38	0.00	6.1	1.352	12.76	7.57	13.8	135.1	Brown	
10:00	4	35	120	21.38	0.00	6.04	1.333	12.18	7.76	13.8	136.5	Brown	
10:05	5	40	120	21.38	0.00	5.93	1.292	12.12	7.82	13.9	138	Brown	
10:11	6	46	120	21.38	0.00	5.88	1.284	12.14	7.89	14.3	138.2	Brown	
10:15	4	50	120	21.38	0.00	5.84	1.275	12.92	7.85	14.2	138.5	Brown	

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Sculley st at the corner

Well Locked at Arrival: no

Condition of Well: Missing bolts,Needs repairs

Well Locked at Departure: no

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Well Completion: Flush mount

Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392		Well ID	SHM-07-05X		Date	11/11/2020	
Project Name/Location	Devens, Massachusetts			Weather(°F)	69.1 degrees F and Cloudy. The wind is blowing W/SW at 41.1 mph.			
Measuring Pt. Description	Top of Inner Casing		Screen Setting (ft-bmp)	--		Casing Diameter (in)	2	
Static Water Level (ft-bmp)	14.74		Total Depth (ft-bmp)	65		Water Column(ft)	50.26	
MP Elevation			Pump Intake (ft-bmp)			Purge Method	Low-Flow	
Sample Time	11:50		Volumes Purged	0.38		Sample ID	SHM-07-05X-FAL20	
Purge Start	10:45		Gallons Purged	3.14		Replicate/ Code No.		
Purge End	12:10							

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:55	0	0	225	15.78	0.00	6.99	0.396	79.52	0.82	15.8	72.9	Dark Brown	
11:00	5	5	225	15.78	0.00	7.07	0.375	79.89	0.75	16.1	66.4	Dark Brown	
11:06	6	11	225	16.81	0.00	7.12	0.362	85.79	0.72	16.7	57.2	Dark Brown	
11:10	4	15	225	17.63	0.00	7.12	0.356	73.75	0.69	16.7	55.7	Dark Brown	
11:15	5	20	225	18.22	0.00	7.12	0.352	70.18	0.69	16.8	51.9	Dark Brown	
11:20	5	25	225	18.22	0.00	7.14	0.31	93.28	0.71	17.1	46.4	Dark Brown	
11:25	5	30	120	19.71	0.00	7.03	0.262	77.07	0.7	17.4	47.7	Dark Brown	
11:30	5	35	120	21.33	0.00	6.92	0.253	28.71	0.72	17.5	51.1	Dark Brown	
11:35	5	40	120	22.66	0.00	6.85	0.251	28.13	0.74	18.1	53.1	Dark Brown	
11:40	5	45	120	23.83	0.00	6.82	0.249	28.22	0.77	18.1	54.1	Dark Brown	
11:45	5	50	120	23.83	0.00	6.75	0.253	27.38	0.81	18.2	56.2	Dark Brown	

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form

Well Location:	<u>Sculley st</u>	Well Locked at Arrival:	<u>no</u>
Condition of Well:	<u>Missing bolts,Needs repairs</u>	Well Locked at Departure:	<u>no</u>
Well Completion:	<u>Flush mount</u>	Key Number To Well:	<u>NA</u>

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-05-40X	Date	11/11/2020
Project Name/Location	Devens, Massachusetts	Weather(°F)	71.1 degrees F and Mostly Cloudy. The wind is blowing undefined at 0.0 mph.		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	14.83	Total Depth (ft-bmp)	34	Water Column(ft)	19.17
MP Elevation		Pump Intake (ft-bmp)	33	Purge Method	Low-Flow
Sample Time	12:50	Volumes Purged	0.45	Sample ID	SHM-05-40X-FAL20
Purge Start	12:15	Gallons Purged	1.41	Replicate/ Code No.	SHL-DUP10-FAL20
Purge End	13:06				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:15	0	0	120	14.92	0.00	6.69	0.239	29.91	0.76	13.6	59.8	Clear	None
12:20	5	5	120	14.9	0.00	6.42	0.404	19.63	0.56	13.6	44.8	Clear	None
12:25	5	10	150	14.89	0.00	6.39	0.408	17.92	0.5	13.8	30.2	Clear	None
12:31	6	16	150	14.89	0.00	6.4	0.386	14.49	0.48	13.7	23.1	Clear	None
12:37	6	22	150	14.89	0.00	6.37	0.407	12.35	0.46	13.7	15.9	Clear	None
12:40	3	25	150	14.89	0.00	6.37	0.405	11.82	0.45	13.5	11.9	Clear	None
12:45	5	30	150	14.89	0.00	6.36	0.403	11.54	0.45	13.5	6.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	2	HNO3
Alkalinity	250 mL Plastic	2	None
Chloride,Sulfate	125 mL Plastic	2	None
Dissolved Organic Carbon	250 mL Amber	2	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Scully street	Well Locked at Arrival: no
Condition of Well: Cracked well pad,Needs repairs	Well Locked at Departure: no
Well Completion: Flush mount	Key Number To Well: NA

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-6A	Date	11/11/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	72.0 degrees F and Partly Cloudy. The wind is blowing S at 54.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	23.78	Total Depth (ft-bmp)	33	Water Column(ft)	9.22
MP Elevation		Pump Intake (ft-bmp)	30	Purge Method	Low-Flow
Sample Time	14:30	Volumes Purged	6.61	Sample ID	EPA-PZ-2012-06A-FAL20
Purge Start	13:30	Gallons Purged	2.44	Replicate/ Code No.	
Purge End	14:38				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:40	0	0	150	23.8	0.00	6.88	0.115	49.42	7.23	17.4	26.6	Clear	None
13:45	5	5	150	23.8	0.00	6.74	0.117	18.91	7.15	17.2	36.3	Clear	None
13:50	5	10	150	23.78	0.00	6.65	0.118	16.54	7.11	17.2	44.1	Clear	None
13:56	6	16	150	23.78	0.00	6.62	0.117	15.32	7.08	17.3	46.4	Clear	None
14:00	4	20	150	23.78	0.00	6.54	0.117	6.57	7.08	17.3	53.1	Clear	None
14:05	5	25	150	23.77	0.00	6.51	0.117	5.63	7.19	17.1	56.4	Clear	None
14:10	5	30	150	23.77	0.00	6.45	0.117	4.26	7.06	16.9	61.1	Clear	None
14:16	6	36	150	23.77	0.00	6.44	0.116	4.12	7.09	16.9	62.1	Clear	None
14:20	4	40	150	23.77	0.00	6.41	0.116	4.04	7.1	16.9	64.8	Clear	None
14:25	5	45	150	23.77	0.00	6.4	0.116	4.23	7.13	16.8	65.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near treatment building road	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: EPA key

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	EPA-PZ-2012-6B	Date	11/11/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	71.1 degrees F and Mostly Clear. The wind is blowing S/SW at 20.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	23.58	Total Depth (ft-bmp)	79.23	Water Column(ft)	55.65
MP Elevation		Pump Intake (ft-bmp)	77	Purge Method	Low-Flow
Sample Time	15:30	Volumes Purged	0.92	Sample ID	EPA-PZ-2012-6B-FAL20
Purge Start	14:45	Gallons Purged	2.08	Replicate/ Code No.	
Purge End	15:42				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:50	0	0	150	23.59	0.00	6.31	0.137	22.29	0.8	15.9	70.7	Clear	None
14:55	5	5	175	23.59	0.00	6.37	0.141	26.34	0.63	15.6	55.5	Clear	None
15:00	5	10	175	23.59	0.00	6.38	0.146	9.79	0.56	16.2	43.6	Clear	None
15:05	5	15	175	23.59	0.00	6.4	0.149	3.09	0.53	15.8	31.8	Clear	None
15:10	5	20	175	23.59	0.00	6.42	0.15	3.14	0.51	15.8	21.1	Clear	None
15:15	5	25	175	23.59	0.00	6.45	0.15	2.42	0.47	15.3	3.1	Clear	None
15:20	5	30	175	23.59	0.00	6.45	0.15	2.13	0.47	15.3	0.7	Clear	None
15:25	5	35	175	23.59	0.00	6.45	0.15	2.34	0.46	15.4	-1.6	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near fence at road to treatment building	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: EPA key

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-12	Date	11/11/2020		
Project Name/Location	Devens, Massachusetts	Weather(°F)	72.0 degrees F and Mostly Cloudy. The wind is blowing S/SW at 54.0 mph.				
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	34.77	Total Depth (ft-bmp)	58.68	Water Column(ft)	23.91	Gallons in Well	3.89
MP Elevation		Pump Intake (ft-bmp)	53.68	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	16:05	Volumes Purged	0.85	Sample ID	SHM-10-12-FAL20	Sampled by	Desmond Bedard
Purge Start	14:59	Gallons Purged	3.30	Replicate/ Code No.	SHM-10-12-FAL20 MS; SHM-10-12-FAL20 MSD		
Purge End	16:20						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:10	0	0	180	34.77	0.52	5.82	96.2	62.99	0.72	13.2	95.5	Clear	None
15:15	5	5	150	34.77	0.72	5.82	0.284	52.08	0.67	13	84.1	Clear	None
15:20	5	10	150	34.77	0.92	5.8	0.387	31.34	0.61	12.6	74.1	Clear	None
15:25	5	15	150	34.77	1.12	5.8	0.39	25.91	0.59	12.7	70.7	Clear	None
15:30	5	20	150	34.77	1.32	5.79	0.392	20.42	0.56	12.8	66.1	Clear	None
15:35	5	25	150	34.77	1.51	5.78	0.394	17.08	0.54	12.6	61.4	Clear	None
15:40	5	30	150	34.77	1.71	5.78	0.393	14.31	0.52	12.3	58	Clear	None
15:45	5	35	150	34.77	1.91	5.78	0.394	13.19	0.51	12.3	55.5	Clear	None
15:50	5	40	150	34.77	2.11	5.78	0.394	13.09	0.5	12.3	53.6	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	3	HNO3
Alkalinity	250 mL Plastic	3	None
Chloride,Sulfate	125 mL Plastic	3	None
Dissolved Organic Carbon	250 mL Amber	3	H2SO4

Comments: Initial purge appearance - grey haze; initial purge odor - slight garbage smell.

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: NA

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-93-18B	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	62.1 degrees F and Cloudy. The wind is blowing N/NW at 41.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	19.22	Total Depth (ft-bmp)	90.95	Water Column(ft)	71.73
MP Elevation		Pump Intake (ft-bmp)	87	Purge Method	Low-Flow
Sample Time	09:30	Volumes Purged		Sample ID	SHM-93-18B-FAL20
Purge Start	08:50	Gallons Purged		Replicate/ Code No.	
Purge End	09:48				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:57	0	0	200	19.26	0.00	7.79	0.351	26.7	4.33	12.8	185.9	Clear	None
09:00	3	3	200	19.26	0.00	7.04	0.396	13.6	1.84	12.7	204.7	Clear	None
09:03	3	6	200	19.26	0.00	6.54	0.406	110	1.04	12.7	210.3	Clear	None
09:08	5	11	200	19.26	0.00	6.23	0.4	7.5	0.83	12.6	212.6	Clear	None
09:11	3	14	200	19.26	0.00	6.1	0.397	9.6	0.79	12.6	213.6	Clear	None
09:14	3	17	200	19.26	0.00	6.02	0.398	11.8	0.75	12.7	214	Clear	None
09:17	3	20	200	19.26	0.00	5.96	0.397	9	0.72	12.7	214.3	Clear	None
09:21	4	24	200	19.26	0.00	5.9	0.395	9	0.71	12.5	215.1	Clear	None
09:24	3	27	200	19.26	0.00	5.86	0.392	8.5	0.69	12.6	215.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	NA	NA
Alkalinity	NA	NA	NA
Chloride,Sulfate	NA	NA	NA
Dissolved Organic Carbon	NA	NA	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-4	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	61.0 degrees F and Cloudy. The wind is blowing NW at 29.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	10.65	Total Depth (ft-bmp)	14.77	Water Column(ft)	4.12
MP Elevation		Pump Intake (ft-bmp)	11	Purge Method	Low-Flow
Sample Time	11:00	Volumes Purged		Sample ID	SHL-4-FAL20
Purge Start	10:30	Gallons Purged		Replicate/ Code No.	
Purge End	11:13				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:34	0	0	200	10.66	0.00	6.53	0.135	348	2.49	13.1	27.3	Brown	None
10:37	3	3	200	10.66	0.00	6.2	0.135	190	1.41	12.9	12	Brown	None
10:40	3	6	200	10.66	0.00	6.08	0.144	164	0.93	12.8	-5.4	Brown	None
10:43	3	9	200	10.66	0.00	6.03	0.145	101.1	0.87	12.9	-10.4	Brown	None
10:46	3	12	200	10.66	0.00	6.01	0.146	73.1	0.82	12.7	-13.1	Brown	None
10:49	3	15	200	10.66	0.00	6	0.147	65.3	0.79	12.7	-14.4	Brown	None
10:53	4	19	200	10.66	0.00	6	0.147	65.3	0.8	12.8	-15.9	Brown	None
10:56	3	22	200	10.66	0.00	6	0.147	65.2	0.8	12.7	-17.2	Brown	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number 30048392 Well ID SHM-10-11 Date 11/12/2020

Project Name/Location		Devens, Massachusetts		Weather(°F)	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Well Casing Material	PVC				
Static Water Level (ft-bmp)	41.28	Total Depth (ft-bmp)	63.8	Water Column(ft)	22.52
Gallons in Well	3.66				
MP Elevation		Pump Intake (ft-bmp)	58.8	Purge Method	Low-Flow
Sample Method	Low-Flow				
Sample Time	11:20	Volumes Purged	0.45	Sample ID	SHM-10-11-FAL20
Sampled by	Desmond Bedard				
Purge Start	10:21	Gallons Purged	1.64	Replicate/ Code No.	
Purge End	11:20				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:30	0	0	105	41.31	0.25	6.11	0.582	510.2	0.29	13.3	49.6	Clear	None
10:35	5	5	105	41.31	0.39	6.01	0.563	199.23	0.28	12.8	39.9	Clear	None
10:40	5	10	105	41.31	0.53	5.97	0.553	102.81	0.29	12.6	35.9	Clear	None
10:45	5	15	105	41.31	0.67	5.96	0.546	47.29	0.28	12.4	30.6	Clear	None
10:50	5	20	105	41.31	0.80	5.96	0.546	27.89	0.23	12.2	25.2	Clear	None
10:55	5	25	105	41.31	0.94	5.96	0.545	24.88	0.23	12.1	22.4	Clear	None
11:00	5	30	105	41.31	1.08	5.97	0.544	19.83	0.19	12.1	20.4	Clear	None
11:05	5	35	105	41.31	1.22	5.97	0.543	19.38	0.19	12	17.9	Clear	None
11:10	5	40	105	41.31	1.36	5.97	0.541	19.02	0.19	12	15.9	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments: Purge start delay due to issues with regulator and tubing; switching both worked.

Initial purge appearance - grey clouds/haze; initial purge odor - none

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____ Well Locked at Arrival: yes
Condition of Well: Good condition _____ Well Locked at Departure: yes
Well Completion: Stick-up _____ Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-16	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	61.0 degrees F and Cloudy. The wind is blowing N/NW at 16.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2
Static Water Level (ft-bmp)	8.6	Total Depth (ft-bmp)	87.4	Water Column(ft)	78.8
MP Elevation		Pump Intake (ft-bmp)	84	Purge Method	Low-Flow
Sample Time	12:30	Volumes Purged		Sample ID	SHM-10-16-FAL20
Purge Start	12:03	Gallons Purged		Replicate/ Code No.	
Purge End	12:40				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:09	0	0	200	8.6	0.00	6.13	0.359	28	2.68	11.6	-37.3	Clear	None
12:11	2	2	200	8.6	0.00	6.11	0.383	35	1.42	11.5	-53	Clear	None
12:14	3	5	200	8.6	0.00	6.15	0.392	28.5	1.12	11.5	-57.9	Clear	None
12:17	3	8	200	8.6	0.00	6.19	0.394	25.9	0.95	11.5	-61.8	Clear	None
12:20	3	11	200	8.6	0.00	6.21	0.392	25.1	0.9	11.5	-63.9	Clear	None
12:23	3	14	200	8.6	0.00	6.22	0.387	25.9	0.87	11.5	-65.4	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-05A	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	59.0 degrees F and Cloudy. The wind is blowing N at 45.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	25.21	Total Depth (ft-bmp)	60.13	Water Column(ft)	34.92
MP Elevation		Pump Intake (ft-bmp)	57	Purge Method	Low-Flow
Sample Time	13:55	Volumes Purged		Sample ID	SHM-10-05A-FAL20
Purge Start	13:21	Gallons Purged		Replicate/ Code No.	
Purge End	14:10			Sampled by	Connor Rosenbaum

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:29	0	0	200	25.23	0.00	6.75	0.168	388	3.8	13.6	108.3	Clear	None
13:32	3	3	200	25.23	0.00	6.29	0.168	55	1.98	13.3	122.2	Clear	None
13:35	3	6	200	25.23	0.00	6.01	0.168	263	1.49	13.5	131.6	Clear	None
13:38	3	9	200	25.23	0.00	5.87	0.168	220	1.34	13.4	137.4	Clear	None
13:41	3	12	200	25.23	0.00	5.77	0.167	260	1.27	13.4	144	Clear	None
13:44	3	15	200	25.23	0.00	5.73	0.166	7	1.25	13.2	147.8	Clear	None
13:47	3	18	200	25.23	0.00	5.69	0.165	6.3	1.23	13.4	152.2	Clear	None
13:50	3	21	200	25.23	0.00	5.67	0.165	6.27	1.23	13.4	155.3	Clear	None
13:53	3	24	200	25.23	0.00	5.64	0.165	6.2	1.21	13.5	157.7	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: no _____
Condition of Well: Cracked well pad,Good condition,Missing bolts _____	Well Locked at Departure: no _____
Well Completion: Flush mount _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHL-23	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	62.1 degrees F and Cloudy. The wind is blowing N/NW at 41.1 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	4
Static Water Level (ft-bmp)	30.4	Total Depth (ft-bmp)	35	Water Column(ft)	4.6
MP Elevation		Pump Intake (ft-bmp)	34	Purge Method	Low-Flow
Sample Time	10:20	Volumes Purged	1.08	Sample ID	SHL-23-FAL20
Purge Start	09:05	Gallons Purged	3.22	Replicate/ Code No.	
Purge End	10:31				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:10	0	0	160	30.4	0.00	10.49	0.041	3.35	10.57	11.1	55.1	Clear	None
09:15	5	5	160	30.4	0.00	9.66	0.038	3.74	9.53	10.8	75.5	Clear	None
09:21	6	11	160	30.4	0.00	8.78	0.038	3.86	9.55	10.8	105.7	Clear	None
09:25	4	15	160	30.4	0.00	8.33	0.038	7.63	9.77	10.7	125.1	Clear	None
09:30	5	20	160	30.4	0.00	7.65	0.038	1.81	9.84	10.7	156.4	Clear	None
09:35	5	25	160	30.4	0.00	7.5	0.039	1.87	9.34	10.7	163.1	Clear	None
09:41	6	31	160	30.4	0.00	7.16	0.039	5.21	9.7	10.7	176.2	Clear	None
09:45	4	35	160	30.4	0.00	6.88	0.04	8.13	9.91	10.7	185.9	Clear	None
09:50	5	40	160	30.4	0.00	6.85	0.04	7.77	10.1	10.7	186.7	Clear	None
09:56	6	46	160	30.4	0.00	6.73	0.041	1.42	9.91	10.7	191.1	Clear	None
10:00	4	50	160	30.4	0.00	6.69	0.041	1.63	9.75	10.6	192.9	Clear	None
10:06	6	56	160	30.4	0.00	6.59	0.042	1.91	9.84	10.7	196.4	Clear	None
10:10	4	60	160	30.4	0.00	6.56	0.042	1.16	9.7	10.6	197.8	Clear	None
10:15	5	65	160	30.4	0.00	6.52	0.043	1.06	10.05	10.6	199.8	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot
 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Information

Well Location:	Edge of property near treatment building	Well Locked at Arrival:	yes
Condition of Well:	Needs repairs	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-06A	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)		
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5
Static Water Level (ft-bmp)	29.3	Total Depth (ft-bmp)	86	Water Column(ft)	56.7
MP Elevation		Pump Intake (ft-bmp)	83	Purge Method	Low-Flow
Sample Time	11:40	Volumes Purged	0.24	Sample ID	SHP-2016-6A-FAL20
Purge Start	11:00	Gallons Purged	1.25	Replicate/ Code No.	
Well Casing Material	PVC	Gallons in Well	5.18	Sample Method	Low-Flow
				Sampled by	Diane Champagne

Purge End													
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:05	0	0	100	29.3	0.00	7.74	0.457	57.74	5.22	12.2	102.8	Black	Mild
11:10	5	5	120	31.99	0.00	8.11	0.393	7.19	0.83	11.6	38.5	Black	Mild
11:15	5	10	120	32.92	0.00	8.12	0.392	7.29	0.79	11.6	36.3	Black	Mild
11:20	5	15	120	33.88	0.00	8.15	0.391	7.22	0.64	11.7	29.3	Black	Mild
11:25	5	20	120	34.01	0.00	8.19	0.392	7.35	0.56	11.9	20.2	Black	Mild
11:29	4	24	120	35.71	0.00	8.24	0.396	3.63	0.48	11.9	10.8	Black	Mild
11:31	2	26	60	35.71	0.00	8.25	0.397	3.21	0.45	12	7.1	Black	Mild
11:35	4	30	60	36.67	0.00	8.27	0.399	3.15	0.44	11.9	2.8	Black	Mild

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near fence line	Well Locked at Arrival: yes
Condition of Well: Good condition	Well Locked at Departure: yes
Well Completion: Stick-up	Key Number To Well: 3753

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-06B		Date	11/12/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	59.0 degrees F and Cloudy. The wind is blowing N at 45.9 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	22.22	Total Depth (ft-bmp)	112	Water Column(ft)	89.78	Gallons in Well	8.21
MP Elevation		Pump Intake (ft-bmp)	107	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	13:40	Volumes Purged		Sample ID	SHP-2016-06B-FAL20	Sampled by	Diane Champagne
Purge Start	12:43	Gallons Purged	0.00	Replicate/ Code No.			

Purge End													Appearance	
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)		Color	Odor
12:51	0	0	90	22.22	0.00	8.67	0.493	6.17	1.41	10.4	20.5		Clear	None
12:56	5	5	90	25	0.00	8.68	0.489	5.26	0.76	10.4	15.1		Clear	None
13:01	5	10	70	25.5	0.00	8.69	0.486	6.03	0.69	10.5	11.5		Clear	None
13:05	4	14	70	25.68	0.00	8.68	0.489	6.2	0.64	10.5	8.2		Clear	None
13:11	6	20	70	25.83	0.00	8.68	0.493	6.36	0.6	10.4	5.2		Clear	None
13:17	6	26	70	26.01	0.00	8.69	0.496	6.51	0.54	10.3	1.5		Clear	None
13:25	8	34	70	26.12	0.00	8.69	0.499	6.76	0.49	10.3	-2.3		Clear	None
13:30	5	39	70	26.12	0.00	8.7	0.5	7.16	0.46	10.2	-5.3		Clear	None
13:35	5	44	70	26.23	0.00	8.7	0.501	7.22	0.45	10.2	-7.5		Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: _____
Condition of Well: _____	Well Locked at Departure: _____
Well Completion: NA _____	Key Number To Well: NA _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-06C		Date	11/12/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	54.0 degrees F and Light Rain. The wind is blowing N at 29.0 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5	Well Casing Material	PVC
Static Water Level (ft-bmp)	24.4	Total Depth (ft-bmp)	133	Water Column(ft)	108.6	Gallons in Well	9.93
MP Elevation		Pump Intake (ft-bmp)		Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	15:25	Volumes Purged	0.18	Sample ID	SHP-2016-06C-FAL20	Sampled by	Diane Champagne
Purge Start	14:25	Gallons Purged	1.79	Replicate/ Code No.			

Purge End													Appearance	
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)		Color	Odor
14:30	0	0	105	24.4	0.00	9.05	0.257	3.99	0.94	9.9	-2.5		Clear	None
14:36	6	6	105	24.4	0.00	9.03	0.257	4.25	0.72	9.9	-2.4		Clear	None
14:40	4	10	105	24.55	0.00	9.01	0.257	4.51	0.59	9.8	-2.6		Clear	None
14:45	5	15	105	24.67	0.00	9.01	0.256	4.83	0.59	9.8	-2.7		Clear	None
14:50	5	20	105	24.67	0.00	8.99	0.257	5.34	0.7	9.8	-2.9		Clear	None
14:55	5	25	105	24.77	0.00	8.99	0.257	6.05	0.69	9.7	-3.5		Clear	None
15:00	5	30	105	24.85	0.00	8.99	0.257	6.34	0.66	9.7	-3.9		Clear	None
15:07	7	37	105	24.9	0.00	8.99	0.256	6.81	0.44	9.6	-5.1		Clear	None
15:11	4	41	105	24.93	0.00	8.98	0.256	6.69	0.38	9.6	-5.9		Clear	None
15:15	4	45	105	24.92	0.00	8.98	0.256	7.01	0.36	9.5	-6.6		Clear	None
15:20	5	50	105	24.92	0.00	8.98	0.256	7.13	0.36	9.6	-7.8		Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfate	125 mL Plastic	1	None
Dissolved Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near fence

Well Locked at Arrival: yes

Condition of Well: Good condition

Well Locked at Departure: yes

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Well Completion: Stick-up

Key Number To Well: 3753

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHP-2016-07B		Date	11/12/2020	
Project Name/Location	Devens, Massachusetts		Weather(°F)	52.0 degrees F and Cloudy. The wind is blowing N/NE at 41.1 mph.			
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	2	Well Casing Material	PVC
Static Water Level (ft-bmp)	32.99	Total Depth (ft-bmp)	79.95	Water Column(ft)	46.96	Gallons in Well	7.63
MP Elevation		Pump Intake (ft-bmp)	77	Purge Method	Low-Flow	Sample Method	Low-Flow
Sample Time	09:00	Volumes Purged		Sample ID	SHP-2016-07B-FAL20	Sampled by	Connor Rosenbaum
Purge Start	08:12	Gallons Purged		Replicate/ Code No.	SHL-DUP05-FAL20		

Purge End		09:59											
Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:12	0	0	200	33.45	0.00	8.03	0.193	500	2.79	10.1	-6.3	Clear	None
08:20	8	8	200	34.55	0.00	7.43	0.189	110	1.15	10	-18.8	Clear	None
08:26	6	14	200	34.6	0.00	7.28	0.186	69	1.16	9.6	-19.5	Clear	None
08:29	3	17	200	34.6	0.00	7.22	0.185	60	1.18	9.4	-19.1	Clear	None
08:32	3	20	200	34.55	0.00	7.16	0.18	50	1.25	8.7	-17.7	Clear	None
08:35	3	23	200	34.55	0.00	7.13	0.176	40	1.37	8.4	-15.9	Clear	None
08:38	3	26	200	34.55	0.00	7.08	0.175	41.3	1.38	8.6	-14	Clear	None
08:43	5	31	200	34.6	0.00	7.05	0.174	42.1	1.38	8.4	-13.5	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: 3753 _____

ft-bmp = feet below measuring point
 in = inches
 ft = feet
 mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
 NTU = Nephelometric Turbidity Unit
 mg/L = milligrams per liter

mV = millivolts
 °F = degrees Fahrenheit
 °C = degrees Celsius

Groundwater Sampling Form

Project Number	30048392	Well ID	SHM-10-04	Date	11/12/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	59.0 degrees F and Cloudy. The wind is blowing N at 45.9 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1.5
Static Water Level (ft-bmp)	5.56	Total Depth (ft-bmp)	65.11	Water Column(ft)	59.55
MP Elevation		Pump Intake (ft-bmp)	60.11	Purge Method	Low-Flow
Sample Time	13:25	Volumes Purged	0.24	Sample ID	SHM-10-04-FAL20
Purge Start	12:36	Gallons Purged	1.29	Replicate/ Code No.	SHM-10-04-FAL20 MS; SHM-10-04-FAL20 MSD
Purge End	13:25				

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:40	0	0	100	5.57	0.11	6.4	0.393	10.78	2.54	11.8	64.8	Clear	None
12:45	5	5	100	5.57	0.24	6.08	0.456	9.53	1.01	11.7	38.8	Clear	None
12:50	5	10	100	5.57	0.37	6.05	0.459	7.6	0.89	11.6	94.2	Clear	None
12:55	5	15	100	5.57	0.50	6.04	0.46	6.28	0.79	11.6	95.4	Clear	None
13:00	5	20	100	5.57	0.63	6.04	0.459	6.99	0.77	11.6	95.6	Clear	None
13:05	5	25	100	5.57	0.77	6.03	0.459	6.01	0.73	11.6	96	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	3	HNO3
Alkalinity	250 mL Plastic	3	None
Chloride,Sulfate	125 mL Plastic	3	None
Dissolved Organic Carbon	250 mL Amber	3	H2SO4

Comments: Lock is too small to close.

Initial purge appearance - clear; initial purge odor - none.

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Well Locked at Arrival: no
Condition of Well: Good condition	Well Locked at Departure: no
Well Completion: Stick-up	Key Number To Well: Unknown

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Sampling Form



Project Number	30048392	Well ID	SHM-10-06A	Date	11/13/2020
Project Name/Location	Devens, Massachusetts		Weather(°F)	39.9 degrees F and Fog/Mist. The wind is blowing N at 25.0 mph.	
Measuring Pt. Description	Top of Inner Casing	Screen Setting (ft-bmp)	--	Casing Diameter (in)	1
Static Water Level (ft-bmp)	35.57	Total Depth (ft-bmp)	89.26	Water Column(ft)	53.69
MP Elevation		Pump Intake (ft-bmp)	86	Purge Method	Low-Flow
Sample Time	11:45	Volumes Purged		Sample ID	SHM-10-06A-FAL20
Purge Start	10:55	Gallons Purged		Replicate/ Code No.	
Purge End	11:59			Sampled by	Connor Rosenbaum

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:05	0	0	200	35.6	0.00	7.06	0.104	29.5	6.52	9.4	54	Clear	None
11:08	3	3	200	35.6	0.00	6.3	0.14	8.5	4.3	9.3	60.1	Clear	None
11:11	3	6	200	35.6	0.00	5.91	0.149	6.4	1.79	9.3	58.3	Clear	None
11:14	3	9	200	35.6	0.00	5.74	0.15	6.2	1.15	9.5	55.7	Clear	None
11:17	3	12	200	35.6	0.00	5.66	0.149	6.3	1	9.4	53.8	Clear	None
11:20	3	15	200	35.6	0.00	5.63	0.0149	5.2	0.094	9.3	52.7	Clear	None
11:24	4	19	200	35.6	0.00	5.6	0.149	5.5	0.88	9.3	51.9	Clear	None
11:27	3	22	200	35.6	0.00	5.59	0.151	6.1	0.84	9.3	50.9	Clear	None
11:30	3	25	200	35.6	0.00	5.59	0.15	6.3	0.82	9.3	50	Clear	None

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: _____	Well Locked at Arrival: yes _____
Condition of Well: Good condition _____	Well Locked at Departure: yes _____
Well Completion: Stick-up _____	Key Number To Well: M15 _____

ft-bmp = feet below measuring point
in = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius

Groundwater Gauging Log

Client:		USACE			
Project Name/Location:		Devens, Massachusetts			
Date(s):		5/18/2020			
Sampler(s):		Desmond Bedard			
		Gabriel O'Connor			
Equipment:		water probe			
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
EPA-PZ-2012-1A	5/18/2020	10:47:00	10.38	27.6	
EPA-PZ-2012-1B	5/18/2020	10:44:00	10.09	77.25	
EPA-PZ-2012-2A	5/18/2020	10:31:00	9.94	27.9	
EPA-PZ-2012-2B	5/18/2020	10:27:00	9.98	83.35	
EPA-PZ-2012-3A	5/18/2020	12:29:00	9.81	26.68	
EPA-PZ-2012-3B	5/18/2020	12:33:00	9.68	76.76	
EPA-PZ-2012-4A	5/18/2020	12:45:00	13.94	27.74	
EPA-PZ-2012-4B	5/18/2020	12:39:00	13.85	76.73	
EPA-PZ-2012-5A	5/18/2020	10:53:00	11.33	27.15	
EPA-PZ-2012-5B	5/18/2020	10:57:00	6.63	12.6	
EPA-PZ-2012-6A	5/18/2020	12:59:00	21.49	33.2	
EPA-PZ-2012-6B	5/18/2020	13:04:00	21.39	80.3	
EPA-PZ-2012-7A	5/18/2020	14:32:00	21.32	29.12	
EPA-PZ-2012-7B	5/18/2020	14:24:00	21.37	64.3	
EW-01	5/18/2020	12:39:00	26.62	63.15	
EW-04	5/18/2020	11:43:00	44.38	102	Well vault is messy; wiring inhibits well cap from attaching properly; heavy garbage smell emanating from well; water table appears lower than at surrounding wells; probe covered in rust colored liquid during exit
PZ-12-01	5/18/2020	09:18:00	20.2	37.6	
PZ-12-02	5/18/2020	09:20:00	19.29	35.25	
PZ-12-03	5/18/2020	09:09:00	19.36	36.8	Lock needs replacement (too small to close)
PZ-12-04	5/18/2020	09:14:00	18.73	36.95	
PZ-12-05	5/18/2020	08:27:00	21.1	34.95	
PZ-12-06	5/18/2020	08:37:00	22.46	36.1	
PZ-12-07	5/18/2020	08:11:00	27.35	33.4	
PZ-12-08	5/18/2020	08:15:00	23.88	32.45	
PZ-12-09	5/18/2020	07:54:00	23.29	33.45	
PZ-12-10	5/18/2020	07:58:00	21.02	23.3	
SHL-10	5/18/2020	07:51:00	30.67	38.85	
SHL-11	5/18/2020	09:00:00	18.36	29.85	
SHL-19	5/18/2020	08:08:00	23.15	33.8	
SHL-20	5/18/2020	09:04:00	17.11	51.55	
SHL-4	5/18/2020	08:24:00	10.13	14.65	
SHM-05-40X	5/18/2020	08:45:00	13.66	33.45	
SHM-05-41B	5/18/2020	10:19:00	9.96	63.96	
SHM-05-41C	5/18/2020	10:22:00	10.31	87.35	
SHM-07-03	5/18/2020	15:40:00	19.03	32.57	
SHM-07-05X	5/18/2020	08:51:00	2.75	64.73	
SHM-11-02	5/18/2020	08:41:00	21.55	57.65	No PVC visible within steel casing; needs new lock (current on is too small to lock)
SHM-11-06	5/18/2020	09:55:00	18.97	35.8	
SHM-13-03	5/18/2020	09:27:00	5.11	52.3	
SHM-13-04	5/18/2020	10:08:00	18.54	29.82	
SHM-13-06	5/18/2020	09:39:00	17.07	45.53	
SHM-13-07	5/18/2020	09:16:00	18.54	34.98	
SHM-13-08	5/18/2020	09:51:00	20.06	64.93	
SHM-93-22B	5/18/2020	12:18:00	6.67	94.15	
SHM-96-5B	5/18/2020	10:36:00	5.79	89.75	
SHP-01-36X	5/18/2020	09:34:00	5.13	11	Lock missing
SHP-01-37X	5/18/2020	09:29:00	3.29	10.25	
SHP-01-38A	5/18/2020	08:51:00	3.59	8.85	
SHP-2016-06A	5/18/2020	11:59:00	19.68	111.9	
SHP-2016-06B	5/18/2020	12:03:00	26.31	85.9	
SHP-2016-06C	5/18/2020	11:15:00	19.74	132.95	
SHP-2016-07A	5/18/2020	10:05:00	14.91	31.8	
SHP-2016-07B	5/18/2020	14:23:00	21.74	80.65	
SHP-2016-1A	5/18/2020	12:09:00	14.3	25.85	Well lock missing
SHP-2016-1B	5/18/2020	12:21:00	16.19	85.9	Well lock missing
SHP-2016-2A	5/18/2020	11:34:00	13.27	27.19	

Client:		USACE			
Project Name/Location:		Devens, Massachusetts			
Date(s):		5/18/2020			
Sampler(s):		Desmond Bedard			
		Gabriel O'Connor			
Equipment:		water probe			
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
SHP-2016-2B	5/18/2020	10:53:00	13.35	87.68	SHP-PZ-16-02A/B label
SHP-2016-3A	5/18/2020	12:24:00	10.81	27.28	
SHP-2016-3B	5/18/2020	10:42:00	10.55	87.38	Well labeled SHP-PZ-16-03A/B.
SHP-2016-4A	5/18/2020	11:17:00	17.41	32.57	
SHP-2016-4B	5/18/2020	11:28:00	17.13	92.35	
SHP-2016-5A	5/18/2020	11:55:00	14.35	32.55	
SHP-2016-5B	5/18/2020	11:51:00	14.29	92.35	
SHP-2017-01	5/18/2020	12:47:00	17.62	79.15	
SHP-2017-02	5/18/2020	11:25:00	18.58	94.4	

Client:		USACE			
Project Name/Location:		Devens, Massachusetts			
Date(s):		11/4/2020			
Sampler(s):		Nicholas Burch Desmond Bedard Diane Champagne Connor Rosenbaum			
Equipment:		water probe			
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
3-2	11/4/2020	09:50:00	40.00	58.25	
20-1	11/4/2020	09:36:00	45.35	56.30	
27-1	11/4/2020	09:40:00	42.85	66.30	
27-2	11/4/2020	09:29:00	51.50	69.50	
32M-01-14XBR	11/5/2020	13:00:00	25.88	47.17	Well steel cap's lock ring fractured. Temporarily removed dedicated bladder pump to gauge.
32M-01-14XOB	11/5/2020	12:53:00	27.05	30.36	Well steel cap's lock ring fractured. Temporarily removed dedicated bladder pump to gauge
32M-01-15XBR	11/5/2020	11:42:00	22.32	44.85	
32M-01-16XBR	11/5/2020	11:20:00	26.94	31.51	Temporarily removed dedicated bladder pump to gauge
32M-92-01X	11/5/2020	12:10:00	20.96	27.70	
32Z-01-07XOB	11/5/2020	12:27:00	19.55	25.34	
CAP-2B	11/4/2020	09:54:00	23.70	58.20	
CH-1D	11/5/2020	07:49:00	21.77	97.21	
CH-1S	11/5/2020	07:55:00	21.87	22.10	New lock, unable to open with existing lock
EPA-PZ-2012-1A	11/4/2020	13:25:00	12.27	22.90	
EPA-PZ-2012-1B	11/4/2020	13:22:00	11.93	77.11	
EPA-PZ-2012-2A	11/4/2020	13:33:00	11.51	23.70	
EPA-PZ-2012-2B	11/4/2020	13:39:00	11.51	83.00	
EPA-PZ-2012-3A	11/4/2020	07:56:00	11.76	26.78	
EPA-PZ-2012-3B	11/4/2020	07:51:00	11.70	76.88	
EPA-PZ-2012-4A	11/4/2020	13:51:00	16.00	27.75	
EPA-PZ-2012-4B	11/4/2020	13:51:00	15.90	76.67	
EPA-PZ-2012-5A	11/4/2020	10:18:00	9.05	27.20	
EPA-PZ-2012-5B	11/4/2020	10:24:00	8.32	85.62	
EPA-PZ-2012-6A	11/4/2020	08:51:00	23.70	33.12	
EPA-PZ-2012-6B	11/4/2020	08:57:00	23.63	27.80	
EPA-PZ-2012-7A	11/4/2020	15:03:00	23.58	29.10	
EPA-PZ-2012-7B	11/4/2020	14:59:00	23.45	64.40	
MW-1	11/4/2020	09:58:00	Dry	11.40	The well is dry.
MW-11A	11/4/2020	09:43:00	Dry	9.05	The well is dry.
MW-14	11/4/2020	09:42:00	Dry	9.95	The well is dry.
MW-16	11/4/2020	09:50:00	Dry	9.60	The well is dry.
MW-22	11/4/2020	09:55:00	Dry	8.80	The well is dry.
MW-4-1	11/4/2020	09:20:00	7.60	7.70	
MW-7	11/4/2020	08:48:00	Dry	5.50	The well is dry.
MW-9	11/4/2020	08:55:00	Dry	5.70	The well is dry.
N1-P1	11/4/2020	10:04:00	14.85	73.14	
N1-P2	11/4/2020	10:00:00	14.28	48.25	
N1-P3	11/4/2020	09:58:00	13.71	16.94	Compression cap missing
N2-P1	11/4/2020	08:59:00	5.24	41.90	
N2-P2	11/4/2020	08:56:00	5.26	12.67	
N3-P1	11/4/2020	08:34:00	4.86	37.99	
N3-P2	11/4/2020	08:40:00	4.14	12.52	
N5-P1	11/4/2020	08:16:00	24.70	100.80	
N5-P2	11/4/2020	08:16:00	24.80	32.80	
N6-P1	11/5/2020	13:39:00	37.52	91.21	Had to cut off lock
N7-P1	11/4/2020	10:51:00	32.00	71.35	
N7-P2	11/4/2020	10:51:00	32.10	37.30	
PSP-01	--	--	--	--	Not located, presumed to be destroyed (near apparent beaver dam)
PZ-12-01	11/4/2020	08:47:00	20.80	35.51	
PZ-12-02	11/4/2020	08:49:00	20.81	34.31	
PZ-12-03	11/4/2020	09:09:00	19.55	36.40	
PZ-12-04	11/4/2020	09:05:00	20.71	36.75	
PZ-12-05	11/4/2020	09:28:00	21.78	34.40	

Client:		USACE			
Project Name/Location:		Devens, Massachusetts			
Date(s):		11/4/2020			
Sampler(s):		Nicholas Burch Desmond Bedard Diane Champagne Connor Rosenbaum			
Equipment:		water probe			
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
PZ-12-06	11/4/2020	09:26:00	24.44	35.60	
PZ-12-07	11/4/2020	09:59:00	27.75	34.05	
PZ-12-08	11/4/2020	10:01:00	24.45	34.40	
PZ-12-09	11/4/2020	11:06:00	24.60	33.00	
PZ-12-10	11/4/2020	11:05:00	23.45	32.11	
Q4-1	11/4/2020	10:00:00	35.10	42.40	
Q5-1	11/4/2020	10:05:00	31.15	53.45	
RSK-15	11/4/2020	10:25:00	8.73	14.50	
RSK-19	11/4/2020	07:56:00	1.99	9.60	
RSK-25	--	--	--	--	Not located, presumed to be destroyed
RSK-27	11/4/2020	09:51:00	23.55	25.90	
RSK-28	11/4/2020	09:17:00	21.66	25.90	
RSK-32	11/4/2020	09:03:00	19.41	25.50	
RSK-34	--	--	--	--	Not located, presumed to be destroyed
RSK-35	11/4/2020	08:41:00	17.76	5.00	
RSK-37	11/4/2020	08:26:00	3.97	8.82	
RSK-7	11/4/2020	08:52:00	5.24	11.19	
SHL-10	11/4/2020	11:42:00	31.20	38.50	
SHL-11	11/4/2020	08:59:00	18.67	29.75	
SHL-12	11/4/2020	12:36:00	23.35	28.60	
SHL-13	11/4/2020	11:14:00	7.17	21.23	Had to cut off lock to access
SHL-15	11/4/2020	13:44:00	21.00	26.40	
SHL-17	11/4/2020	12:53:00	8.20	18.40	
SHL-18	11/4/2020	10:37:00	19.55	28.85	
SHL-19	11/4/2020	10:37:00	22.68	32.30	
SHL-20	11/4/2020	08:54:00	18.80	50.30	
SHL-22	11/4/2020	08:09:00	6.50	111.15	
SHL-23	11/4/2020	14:16:00	30.36	35.15	
SHL-24	11/4/2020	13:27:00	16.35	120.00	
SHL-25	11/5/2020	11:04:00	28.82	39.10	
SHL-3	11/4/2020	11:33:00	30.55	33.95	
SHL-4	11/4/2020	10:13:00	10.68	14.51	
SHL-5	11/4/2020	07:15:00	6.55	13.70	
SHL-7	11/4/2020	14:05:00	18.55	23.60	
SHL-8D	11/4/2020	11:59:00	8.40	69.97	Had to cut off lock - shared with 8S
SHL-8S	11/4/2020	12:02:00	8.56	56.69	Had to cut off lock - shared with 8D
SHL-9	11/4/2020	08:35:00	11.74	26.76	
SHM-05-39A	11/4/2020	15:54:00	12.25	38.60	
SHM-05-39B	11/4/2020	15:55:00	12.99	65.85	
SHM-05-40X	11/4/2020	15:29:00	14.99	33.15	
SHM-05-41A	11/4/2020	15:17:00	12.01	40.44	
SHM-05-41B	11/4/2020	15:14:00	11.68	61.70	
SHM-05-41C	11/4/2020	15:20:00	12.12	87.41	
SHM-05-42A	11/4/2020	09:54:00	5.90	44.00	
SHM-05-42B	11/4/2020	09:59:00	6.00	73.90	
SHM-07-03	11/4/2020	15:46:00	20.70	33.00	
SHM-07-05X	11/4/2020	15:33:00	14.95	64.00	
SHM-10-01	11/4/2020	16:18:00	4.23	71.36	Compression plug missing
SHM-10-02	11/4/2020	13:26:00	18.31	64.85	
SHM-10-03	11/4/2020	13:15:00	27.03	70.12	
SHM-10-04	11/4/2020	12:58:00	6.52	65.11	
SHM-10-05A	11/4/2020	16:21:00	25.28	59.90	
SHM-10-06	11/4/2020	08:24:00	20.31	81.11	

Client:		USACE			
Project Name/Location:		Devens, Massachusetts			
Date(s):		11/4/2020			
Sampler(s):		Nicholas Burch Desmond Bedard Diane Champagne Connor Rosenbaum			
Equipment:		water probe			
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
SHM-10-06A	11/5/2020	14:19:00	36.11	90.57	Signal from water probe was weak; exact location of water table difficult to deduce.
SHM-10-07	11/4/2020	14:22:00	27.85	50.20	
SHM-10-08	11/4/2020	13:32:00	9.78	57.21	
SHM-10-10	11/4/2020	16:00:00	10.92	67.31	Had to cut off lock
SHM-10-11	11/5/2020	08:07:00	41.24	62.18	
SHM-10-12	11/4/2020	08:10:00	34.70	57.40	
SHM-10-13	11/4/2020	08:12:00	26.80	73.10	
SHM-10-14	11/4/2020	08:06:00	27.15	82.50	
SHM-10-15	11/4/2020	08:31:00	25.30	56.70	
SHM-10-16	11/5/2020	13:57:00	8.63	88.87	
SHM-11-02	11/4/2020	09:22:00	23.90	68.15	Very soft bottom
SHM-11-06	11/4/2020	08:35:00	20.75	35.50	
SHM-11-07	11/4/2020	09:15:00	23.24	47.84	
SHM-13-01	11/4/2020	16:30:00	3.28	52.31	
SHM-13-02	11/5/2020	14:15:00	13.04	72.85	
SHM-13-03	11/4/2020	15:40:00	5.39	51.21	PVC is broken ~4ft down; can easily pull it out
SHM-13-04	11/4/2020	16:27:00	19.65	29.90	
SHM-13-05	11/4/2020	16:38:00	16.96	85.15	
SHM-13-06	11/4/2020	14:35:00	17.63	46.34	
SHM-13-07	11/5/2020	14:43:00	19.11	35.80	Was hidden below roughly 1" of gravel.
SHM-13-08	11/4/2020	15:58:00	20.68	64.25	
SHM-13-14D	11/4/2020	14:56:00	3.63	58.43	
SHM-13-14S	11/4/2020	15:00:00	3.65	17.74	
SHM-13-15	11/4/2020	15:15:00	4.03	63.24	Compression cap missing
SHM-93-10D	11/4/2020	11:40:00	30.71	57.60	
SHM-93-18B	11/4/2020	14:16:00	19.25	90.68	
SHM-93-22B	11/4/2020	08:03:00	9.73	93.65	
SHM-93-22C	11/4/2020	08:14:00	11.35	136.81	
SHM-93-24A	11/4/2020	13:23:00	16.68	28.70	
SHM-96-5B	11/4/2020	07:28:00	7.63	88.51	
SHM-96-5C	11/4/2020	07:22:00	7.08	79.60	
SHM-99-31A	11/4/2020	10:40:00	1.67	15.62	
SHM-99-31B	11/4/2020	10:44:00	4.57	61.40	
SHM-99-31C	11/4/2020	10:49:00	4.87	79.90	
SHM-99-32X	11/4/2020	11:14:00	10.42	83.96	
SHP-01-36X	11/4/2020	09:24:00	7.35	12.91	Lock missing
SHP-01-37X	11/4/2020	09:14:00	6.04	11.19	
SHP-01-38A	11/4/2020	10:46:00	3.96	9.08	
SHP-01-38B	11/4/2020	08:06:00	4.08	25.55	
SHP-05-43	11/4/2020	10:19:00	45.61	51.08	
SHP-05-44	11/4/2020	10:32:00	42.19	60.90	Level logger had ~4-inch high pile of dead ants and dirt on top of it - cleaned prior to its re entry.
SHP-05-45A	11/4/2020	08:09:00	17.90	27.00	
SHP-05-45B	11/4/2020	08:11:00	18.31	76.00	
SHP-05-46A	11/4/2020	08:17:00	17.11	27.00	
SHP-05-46B	11/4/2020	08:19:00	16.38	75.40	
SHP-05-47A	11/4/2020	11:35:00	3.54	6.00	
SHP-05-47B	11/4/2020	11:37:00	2.28	5.88	
SHP-05-48A	11/4/2020	11:06:00	4.45	5.30	
SHP-05-48B	11/4/2020	11:09:00	3.07	5.03	
SHP-05-49A	11/4/2020	11:38:00	5.57	8.81	
SHP-05-49B	11/4/2020	11:40:00	3.32	5.15	
SHP-2016-06A	11/4/2020	14:22:00	29.98	86.00	
SHP-2016-06B	11/4/2020	14:25:00	24.65	112.00	

Client:		USACE			
Project Name/Location:		Devens, Massachusetts			
Date(s):		11/4/2020			
Sampler(s):		Nicholas Burch Desmond Bedard Diane Champagne Connor Rosenbaum			
Equipment:		water probe			
Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
SHP-2016-06C	11/4/2020	14:28:00	24.35	133.00	
SHP-2016-07A	11/5/2020	13:12:00	31.46	32.25	
SHP-2016-07B	11/5/2020	13:16:00	35.54	80.90	
SHP-2016-1A	11/4/2020	07:44:00	16.62	25.90	
SHP-2016-1B	11/4/2020	07:49:00	19.10	85.81	
SHP-2016-2A	11/4/2020	09:22:00	15.28	27.25	
SHP-2016-2B	11/4/2020	09:28:00	15.30	87.76	
SHP-2016-3A	11/4/2020	08:22:00	11.52	27.35	
SHP-2016-3B	11/4/2020	08:27:00	12.47	87.50	
SHP-2016-4A	11/4/2020	09:08:00	19.17	92.42	
SHP-2016-4B	11/4/2020	09:13:00	19.45	32.65	
SHP-2016-5A	11/4/2020	09:34:00	16.35	32.61	
SHP-2016-5B	11/4/2020	09:38:00	16.38	92.50	
SHP-2017-01	11/4/2020	07:38:00	20.31	78.20	
SHP-2017-02	11/4/2020	14:07:00	20.90	93.00	
SHP-95-27X	11/4/2020	10:43:00	31.90	42.70	
SHP-99-01C	11/5/2020	08:40:00	24.95	32.20	
SHP-99-29X	11/4/2020	08:34:00	25.85	30.90	
SHP-99-34B	11/4/2020	11:28:00	13.80	74.45	
SHP-99-35X	11/5/2020	07:33:00	36.80	41.43	New lock, no keys were able to unlock existing lock
SHSG-13-01G	--		Dry		Unable to measure - water level is below bottom of gauge.
SHSG-13-02G	11/4/2020	14:14:00	2.85		Staff gauge
SHSG-13-03G	--				Unable to measure - gauge is located some distance into deep water. Cannot read gauge with binoculars.
SHSG-14-01G	11/4/2020	11:41:00	2.47		Staff gauge