Semi-Annual Groundwater Monitoring Report
January - June 2021
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Prepared for

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

Boomsnub	Boomsnub Corporation
CAS	Chemical Abstract Service
EA	EA Engineering, Science, and Technology, Inc., PBC
EPA	U.S. Environmental Protection Agency
GWTS	Groundwater Treatment System
MS/MSD	Matrix Spike/Matrix Spike Duplicate
Messer	Messer LLC
MCL	EPA Maximum Contaminant Level
µg/L	micrograms per liter
MTCA	Washington State Model Toxics Control Act
OU	Operable Unit
PDB	Passive Diffusion Bag
QA	quality assurance
QASP	Quality Assurance and Sampling Plan
QC	quality control
Site	Boomsnub/Airco Superfund Site
TCE	trichloroethene
VOC	volatile organic compound

1 INTRODUCTION

This Semi-Annual Groundwater Monitoring Report summarizes information on activities that took place from January to June 2021 at the Boomsnub/Airco Superfund Site (Site) in Hazel Dell, Washington. This section summarizes site background and document scope and organization.

1.1 Background

The Site is in Hazel Dell, Washington, just north of the city limits of Vancouver, Washington. The Site includes two adjacent properties, the Messer LLC (Messer) facility (formerly operated by Linde LLC, The BOC Group, and Airco Gases) and the former Boomsnub Corporation (Boomsnub) property. The Site's primary compounds of concern are hexavalent chromium (represented by total chromium) and trichloroethene (TCE). Operable Unit (OU)-1, located on the Boomsnub property, is the source of hexavalent chromium, and OU-2, located on the Messer property, is the source of TCE. The Site also includes impacted groundwater in the alluvial and Troutdale aquifers, designated as OU-3. The Site extends approximately 4,000 feet in a west-northwest direction from the two properties. Currently, OU-1, OU-2, and OU-3 are being monitored. EA Engineering, Science, and Technology, Inc., PBC (EA) has been the consultant for Messer (and the Site's former operators) since 1995 and took over site operations in 2002.

In 2008, an investigation identified a new TCE plume north of the OU-3 Plume, in the area around well AMW-18 (EA 2008a). This plume is referred to as the Northern Plume. Additional investigation of the Northern Plume area was performed in May 2011 (EA 2011), and a monitoring well (AMW-64) was installed in the Northern Plume area in February 2012, at the request of the U.S. Environmental Protection Agency (EPA). Contamination from the Northern Plume is not attributed to past or current activities on the Boomsnub or Messer properties as referenced in the Boomsnub/Airco Superfund Site Closure Plan (EA 2018). The EPA is leading the effort to characterize and remediate the Northern Plume. The Work Plan for the 2008 investigation noted that an offsite source of TCE originating from the Permalume property immediately east and upgradient of the Messer gas plant property impacted monitoring well AMW-8A, which is located at the eastern boundary of the Messer Property and is approximately 700 feet northeast of the Boomsnub/Airco Site TCE Source Area (EA 2008a). AMW-8A and the Permalume property are located upgradient of Northern Plume well AMW-18, and the results of the AMW-18 Area Investigation support a finding of the Permalume property as the source of the Northern Plume.

The BOC Group assumed responsibility for Site operations and maintenance on 1 April 2002, pursuant to an Administrative Order of Consent signed by The BOC Group and the EPA (Docket No. CERCLA 102002-0052). The responsibility continued pursuant to a 29 June 2007 Consent Decree (Docket No. CVO7-5163 FDB). Messer, as the current successor to The BOC Group, is now operating the facility and leading the remediation. EA currently maintains two systems at the Site for Messer; a system that extracted and treated groundwater containing chromium and volatile organic compounds (VOCs), including TCE, and an infiltration gallery on the Messer property that was used for discharge of treated groundwater. These systems were shut off in

January 2021 but are maintained in a state of readiness, should EPA elect to reactivate the systems. Remedial actions implemented at the Site are summarized below:

- A soil vapor extraction system (2004 to 2008) to treat vadose zone soil in the TCE Source area (OU-2). The system was shut down, with EPA approval, following completion of rebound testing as documented in a letter dated 4 March 2008 (EA 2008b).

- An in-well stripping system (2004 to 2013) to treat groundwater in OU-2. The system was turned off with EPA approval in August 2013 (EPA 2013).

- The Toe-of-Plume Pilot Study, an in-situ treatment program, that was successfully performed in 2006 to treat an area of recalcitrant VOC and chromium contamination in the original toe-of-plume area.

- In-situ groundwater treatments using EHC® Plus that began in Fall 2018 in the vicinity of Intermediate Well MW-18D, and in October 2019 in the vicinity of Intermediate Wells MW-14E, MW-19D, and AMW-59 to treat TCE "hotspots".

- A groundwater extraction and treatment system (GWTS) (1990 to 2021) to reduce the chemicals of concern within the dissolved groundwater contaminant plume to concentrations below Site-cleanup levels. The system was shut down, with EPA approval, on 15 January 2021.

- Infiltration gallery located on Messer property was used to discharge treated groundwater. The infiltration gallery was constructed during September and October 2005 and began receiving water in February 2006. The infiltration gallery stopped receiving effluent from the GWTS when the GWTS was shut down on 3 January 2021.

Cleanup levels for constituents of concern, as established in the Record of Decision (EPA 2000), are presented in the following table.

Groundwater Cleanup Levels

Constituents of Concern	CAS Number	Basis	Practical[(a)] Quantitation Limit (µg/L)	Cleanup[(b)] Level (µg/L)
Hexavalent chromium	18540-29-9	MTCA B	5	80
Chromium (total)	7440-47-3	MCL	5	100
Bromodichloromethane	75-27-4	MTCA B	1	1
Carbon tetrachloride	56-23-5	MTCA B	1	1
Dibromochloromethane	124-48-1	MTCA B	1	1
1,2-Dichloroethane	107-06-2	MCL	1	5
1,1-Dichloroethene	75-35-4	MTCA B	1	1
Tetrachloroethene	127-18-4	MCL	1	5
1,1,1-Trichloroethane	71-55-6	MCL	1	200

Trichloroethene	79-01-6	MCL	1	5

NOTES: CAS = Chemical Abstract Service
µg/L = Micrograms per liter
MTCA = Washington State Model Toxics Control Act
MCL = Maximum Contaminant Level
(a) Washington State Department of Ecology Implementation Memo No. 3 dated 24 November 1993.
(b) Cleanup level established as the higher of the regulatory level or the practical quantitation limit; see Washington Administrative Code 173-340-700(6) and Washington State Department of Ecology Implementation Memo No. 3 dated 24 November 1993.

1.2 Purpose and Scope

1.2.1 Site Progress

This Site progress reporting includes a summary of the treatment system operations and monitoring during the reporting period (January through June 2021), summaries of meetings that took place during the reporting period, and a discussion of problems and problem resolution, as applicable.

1.2.2 Quarterly Groundwater Monitoring

The Winter and Spring 2021 quarterly sampling events included collection of groundwater samples from selected wells at the Site with analysis for VOCs and/or chromium. Winter groundwater samples were collected on 1 through 5 February 2021. Spring groundwater samples were collected on 19 through 23 April 2021. Water levels were measured 5 February 2021 and 23 April 2021.

The goals of quarterly groundwater sampling at the Site include the following:

- Documenting the lateral and vertical extent of VOCs and chromium in groundwater.
- Monitoring changes in VOC and chromium concentrations in groundwater across the Site.
- Evaluating groundwater flow patterns in the alluvial and Troutdale aquifers.
- Evaluating groundwater around the GWTS to ensure residual chromium concentrations do not indicate a spread of contamination following the shutdown of the GWTS. Additional monitoring in this area will identify any changes to the residual chromium plume concentration or configuration in the period between GWTS shutdown and final soil excavation.

The following tasks were performed to accomplish these goals:

- Collected/analyzed groundwater samples from selected monitoring and extraction wells.
- Collected water level data from Site monitoring and extraction wells.

1.3 Organization of this Document

This report is divided into four sections and three appendices.

- Section 1 provides the project background and scope.
- Section 2 summarizes remedial action progress during the reporting period.
- Section 3 discusses groundwater monitoring field activities performed, samples collected, and a brief discussion of analytical results for groundwater samples and groundwater elevation measurements. A comprehensive evaluation of well trends and data is presented in the Annual Report.
- Section 4 lists the references cited in this document.

The report appendices provide the following:

- Appendix A – laboratory chain-of-custody documentation for groundwater samples collected during the Winter and Spring 2021 sampling event and the analytical results summary for groundwater samples.
- Appendix B – documentation relative to the OU-3 treatment system operations and monitoring.
- Appendix C – field purge and sampling forms for the Winter and Spring 2021 sampling events.

2 REMEDIAL ACTION PROGRESS

2.1 Meetings

Due to the COVID-19 pandemic, meetings during the reporting period were remotely conducted on a videoconference platform.

- **13 April 2021** – Conference call with Messer/PacTrust Development. Meeting discussed new development located on PacTrust land.
- **20 April 2021** – Conference call with Messer, PacTrust Development, and the EPA. Meeting discussed EPA expectations of remedial system.
- **27 April 2021** – Annual EPA meeting.
- **27 April 2021** – Conference call with Messer/PacTrust. Call discussed plans to leave Boomsnub/Airco Superfund Site forcemain in place. Agree to begin holding regular weekly meetings. Weekly status meetings occurred between 8 June and 20 July 2021.
- **3 May 2021** – EA site visit to meet with PacTrust. Discussed interference issues.
- **8 July 2021** – Conference call for Messer and EPA to discuss technical issues concerning chromium in soil on the Boomsnub property and responsibility for related future work.

2.2 Remedial System Problems Encountered

The system was planned to be shut off and disconnected on 7 January 2021.

- On 3 January 2021, the system shut off due to a heavy rain event triggering a failsafe shutdown in flooded containment vaults. The system remained off as containment vaults were pumped dry.

- The system was turned on again for a brief period on 15 January 2021 to verify restored functionality of all system components and collect influent/effluent samples for the City of Vancouver sewer discharge permit.

- Following the system check and sample collection, the system was turned off, drained, and winterized. The Groundwater Treatment System will remain in this “mothballed” state for the foreseeable future unless the EPA elects to reactivate the system.

2.3 Miscellaneous

The following miscellaneous items were addressed during the January through June reporting period:

- On 3 June 2021 Stratus Corporation completed well modifications to well CPU-14 located on PacTrust Development. Well CPU-14 was raised approximately 12 feet and a

temporary steel well casing was installed to protect the well until final grade is met at the site.

- The 2020 Annual Status Report was submitted to the EPA in March 2021.

- The In-Situ Treatment of Areas of Residual Contamination Phase II Report was submitted to EPA in May 2021.

3 GROUNDWATER MONITORING ACTIVITIES

Sampling activities were conducted in accordance with the EPA-approved Site-specific Quality Assurance and Sampling Plan (QASP) (EA 2019) and the EPA-approved QASP Addendums for Winter 2021 and Spring 2021 Quarterly Sampling Events (EA 2021a and EA 2021b). These documents are referred to as the Site QASP, Winter 2021 QASP Addendum and Spring 2021 QASP Addendum, respectively. Wells sampled during the Winter event and their corresponding analytical results are shown on Figures 1 and 3. Wells sampled during the Spring event and their corresponding analytical results are shown on Figures 2 and 4.

3.1 Water Level Gauging Program

Two rounds of water level measurements were obtained, the first during the Winter sampling event on 5 February 2021 and the second during the Spring sampling event on 23 April 2021, from accessible monitoring and extraction wells. The water levels were measured to the nearest 0.01 foot relative to the top of the well casing using an electronic water level indicator. A summary of the water level data is provided in Tables 1 and 3, respectively. Groundwater contours are presented on Figures 5 through 8.

3.2 Groundwater Monitoring

The Site sampling schedule was presented in the Long-Term Monitoring Plan (EA 2007), with updates provided in the 2020 Annual Status Report (EA 2021c). Groundwater samples were submitted for analysis to ALS Environmental of Kelso, Washington.

The Winter 2021 groundwater sampling activities were conducted on 1 through 5 February 2021. Groundwater samples were collected from 34 wells included in the semi-annual sampling schedule. Personnel present during the sampling event and their responsibilities were: Rick Read, Field Sampling Team Leader/Health and Safety Supervisor and three Field Sampling Team Members.

The Spring 2021 groundwater sampling activities were conducted on 21 through 23 April 2021. Groundwater samples were collected from 31 wells included in the quarterly sampling schedule. Personnel present during the sampling event and their responsibilities were: Rick Read, Field Sampling Team Leader/Health and Safety Supervisor and three Field Sampling Team Members.

Samples from TCE Source (OU-2) wells were analyzed for VOCs. Samples from OU-3 wells were analyzed for VOCs and total chromium or VOCs-only based on the previously approved groundwater monitoring plan. Wells in the Northern Plume area were also sampled for VOCs for use in evaluating potential impacts to Site remediation from the Northern Plume.

During the Winter event additional samples were collected for quality assurance/quality control (QA/QC) purposes, including two field duplicates, three trip blanks, two rinsate blanks, and one matrix spike/matrix spike duplicate (MS/MSD). All results from the rinsate and trip blanks samples were at or below the method detection limit, except for dichloromethane and TCE.

Dichloromethane (also known as methylene chloride) and TCE were detected in Trip Blank 002. The detections of both dichloromethane and TCE in Trip Blank 002 were marked as estimated concentrations below the reporting limit. In accordance with the Consent Decree, data validation is only required for one data package from Fall semi-annual sampling events, therefore the Winter data were not validated.

During the Spring event additional samples were collected for QA/QC purposes, including three field duplicates, four trip blanks, one rinsate blank, and one MS/MSD. All results from the rinsate and trip blanks samples were at or below the method detection limit, except for hexachlorobutadiene and TCE. Hexachlorobutadiene and TCE were detected in Trip Blank 002. The detections of both hexachlorobutadiene and TCE in Trip Blank 002 were marked as estimated concentrations below the reporting limit. In accordance with the Consent Decree, data validation is only required for one data package from Fall semi-annual sampling events, therefore the Spring data were not validated.

The following sections present a summary of the results of the Winter and Spring 2021 sampling event for chromium, TCE, and other VOCs. Results for chromium and TCE are shown on Tables 2, 4, 5, and 6 and Figures 1 through 4.

3.2.1 Winter 2021 Sample Results

3.2.1.1 Chromium

Groundwater from 21 wells was tested for chromium during the Winter 2021 sampling event. Monitoring frequency for chromium was increased to quarterly for Proximal wells MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B to monitor the impacts from the GWTS shutdown in January 2021. After 1 year, monitoring frequency for these wells may be reduced to semi-annual.

Four wells in the Intermediate Well Group (MW-14E, MW-18D, MW-19D, and MW-40) and three wells in the Proximal Source Well Group (MW-3A, MW-4A, and MW-4B) had chromium concentrations above the Site-specific cleanup level of 80 µg/L (Figure 1 and Tables 2 and 5) in Winter 2021.

3.2.1.2 Trichloroethene

Groundwater from 27 wells was tested for TCE during the Winter 2021 sampling event. TCE was detected at concentrations above the Site-specific cleanup level of 5 µg/L in 9 of the 27 samples collected and tested during Winter 2021 (Figure 3). The 9 wells with TCE concentrations above the cleanup level were alluvial aquifer wells and included 5 wells in the Intermediate Well Group (AMW-59, MW-14E, MW-19D, MW-20D, and PZ-39), 3 wells in the TCE Source Well Group (AMW-2A, AMW-12A, and AMW-53A), and the one Northern Plume well that was sampled (MW-38). Two samples collected from Troutdale aquifer wells were analyzed for VOCs in Winter 2021 and both contained TCE at concentrations below the cleanup

level. The concentrations of TCE in OU-3 groundwater (as well as Northern Plume groundwater), based on the Winter 2021 sampling results, are shown in Tables 2 and 6.

3.2.1.3 Other VOCs

Several additional VOCs are commonly detected at the Site. Results for these compounds, in relation to Site cleanup levels, are summarized in Table 2. 1,1-Dichloroethene was detected above the cleanup level of 1 µg/L in Intermediate wells AMW-59 and PZ-39. These results are similar to prior sampling results. Other VOCs detected in samples from Site wells during the Winter 2021 sampling event were at concentrations below cleanup levels.

3.2.1.4 Problems Encountered

The following problems were encountered during the Winter 2021 sampling event:

- Water levels were not collected in wells MW-9C (covered by dumpster), AMW-20, CPU-2, and CPU-10 (submerged under water), AMW-21 (overgrowth of grass), AMW-3A, AMW-10A, AMW-52A, AMW-52C, and MW-34 (covered by vehicles).

- Samples were not collected from CPU-14 because the monitoring well was inaccessible at the time of sampling due to construction at the Padden Parkway site. Monitoring wells MW-4Shed and l MW-1C could not be sampled due to broken passive diffusion bag (PDB) that were not retrievable at the time of sampling. Water depth above the broken PDBs was insufficient for a low flow submersible pump and the wells could therefore not be sampled. After the sampling event, access to CPU-14 was restored and the broken PDBs were retrieved from MW-4Shed and MW-1C.

- QC requirements include collection of one field duplicate per 10 sample analytes and one MS/MSD per 20 sample analytes. The Winter 2021 sampling event included 30 samples collected for VOCs. One field duplicate and one MS/MSD for VOCs were collected in the field but not segregated from the native sample in the laboratory Chain of Custody and were therefore not analyzed as a duplicate and MS/MSD. Field processing of QA samples was discussed with field staff following the sampling event to avoid future processing errors.

3.2.2 Spring 2021 Sample Results

3.2.2.1 Chromium

Groundwater from 16 wells was tested for chromium during the Spring 2021 sampling event. Four wells in the Intermediate Well Group (MW-14C, MW-14E, MW-18D, and MW-20D) and four wells in the Proximal Source Well Group (MW-3A, MW-4A, MW-4B, and MW-4C) had chromium concentrations above the Site-specific cleanup level of 80 µg/L (Figure 2 and Tables 4 and 5).

3.2.2.2 Trichloroethene

TCE was detected at concentrations above the Site-specific cleanup level of 5 µg/L in 15 of the 24 samples analyzed for VOCs during Spring 2021 (Figure 4). The 15 wells with TCE concentrations above the cleanup level were alluvial aquifer wells. One sample collected from a Troutdale aquifer well was analyzed for VOCs in Spring 2021 and contained TCE at a concentration below the cleanup level. The concentrations of TCE in OU-3 groundwater (as well as Northern Plume groundwater), based on the Spring 2021 sampling results, are shown in Tables 4 and 6.

3.2.2.3 Other VOCs

Several additional VOCs are commonly detected at the Site. Results for these compounds, in relation to Site cleanup levels, are summarized in Table 4. 1,1-Dichloroethene was detected above the cleanup level of 1 µg/L in well PZ-39. These results are similar to prior sampling results. Other VOCs detected in samples from Site wells during the Spring 2021 sampling event were at concentrations below cleanup levels.

3.2.2.4 Problems Encountered

The following problems were encountered during the Spring 2021 sampling event:

- Water levels were not collected in monitoring wells MW-9C (covered by dumpster), and MW-34 (Padden Parkway construction access issues) and CPU-12 (covered by vehicles). Monitoring well AMW-21 is buried in a grassy area and could not be located.

- Samples were stored at <6 degrees Celsius in a secure cold storage location (refrigerator) after collection and were packed in ice for courier transport from the field office to the laboratory. However, temperature blanks, cushioning materials, and ice were noted by laboratory staff as packed in two of three coolers in a manner that separated the temperature blank from the ice, which caused >6 degrees Celsius laboratory temperature readings and flags at receipt. The elapsed time between refrigeration at the field office and refrigeration at the laboratory was 1 hour and 15 minutes. This brief rise in temperature of the isolated temperature blank is not expected to affect the validity of the sample results. Temperature blanks will be packaged adjacent to sample bottles during future field events.

- QC requirements includes collection of one MS/MSD per 20 samples of each sample analyte. The Spring 2021 sampling event included 23 samples collected for VOCs. One MS/MSD sample for VOCs was missed in error during the event. The QC ratio for MS/MSDs was discussed with EA's field sampling staff, and how QC samples are

presented in field sampling forms was altered to avoid future errors in QC sample collection.

3.2.3 Comparison to Previous Results

This section provides a brief comparison of Winter and Spring 2021 groundwater monitoring results against previous results. Concentrations were generally within the ranges reported historically. A comprehensive evaluation of well trends and data will be presented in the 2021 Annual Report.

3.2.3.1 Chromium

Intermediate group wells with chromium concentrations exceeding the cleanup level of 80 µg/L in Winter and/or Spring 2021 included MW-14C, MW-14E, MW-18D, MW-19D, MW-20D, and MW-40. Chromium concentrations were above the cleanup level in MW-18D and MW-19D in Winter 2021, similar to previous total chromium results; the concentration in well MW-19D decreased to below the cleanup level in Spring 2021, while the concentration in well MW-18D remained above and has been rising. Chromium concentrations in MW-14E remained above the cleanup level from Fall 2020 to Spring 2021. The chromium concentration in well MW-40 remained above the cleanup level in Winter 2021; this well was not sampled in Spring 2021. Concentrations of chromium in MW-14C and MW-20D remained below the cleanup level in Winter 2021 but increased slightly to exceed the cleanup level in Spring 2021.

Proximal Source group wells with chromium concentrations exceeding the cleanup level in Winter and/or Spring 2021 included MW-3A, MW-4A, MW-4B, and MW-4C. Chromium concentrations decreased in MW-4A and MW-4B in Winter 2021, remaining above the cleanup level, and then increased somewhat in Spring 2021. Wells MW-3A and MW-4C were not analyzed for chromium in 2020 but contained chromium at concentrations above the cleanup level in Winter 2021 (MW-3A only) and Spring 2021 (MW-3A and MW-4C).

Chromium concentrations in Church of God and TCE Source wells remained below cleanup levels, consistent with other recent sampling events.

3.2.3.2 Trichloroethene

Intermediate group wells with TCE concentrations exceeding the cleanup level of 5 µg/L in Winter and/or Spring 2021 included AMW-59, MW-14E, MW-19D, MW-20D, and PZ-39. TCE concentrations in wells MW-20D and PZ-39 in Winter and Spring 2021 were less than in Fall 2020. In-situ groundwater treatments using EHC® Plus began in Fall 2018 in the vicinity of Intermediate well MW-18D, and in October 2019 in the vicinity of Intermediate Wells MW-14E, MW-19D, and AMW-59 to treat TCE “hotspots”. TCE concentrations in wells MW-14E and MW-18D remained similar between Winter 2020 and Spring 2021, with MW-14E marginally above the cleanup level and MW-18D below the cleanup level. TCE concentrations in well MW-19D were lower in Winter and Spring 2021 than in Fall 2020. While TCE concentrations in

AMW-59 had briefly decreased to below the cleanup level in Fall 2020, these returned above the cleanup level in Winter and Spring 2021.

TCE Source group wells with TCE concentrations exceeding the cleanup level in Winter and/or Spring 2021 included AMW-1A, AMW-2A, AMW-12A, and AMW-53A. TCE concentrations in well AMW-2A, AMW-12A, and MW-53A remained above the cleanup level from Fall 2019 to Spring 2021, with variable concentrations but no apparent trends. TCE concentrations in well AMW-1A were above the cleanup level in Spring 2020 and Spring 2021, but below the cleanup level in Winter 2021.

TCE concentrations in the Northern Plume wells in Winter and Spring 2021 were similar to past results. TCE concentrations in Church of God wells and Troutdale wells remained below cleanup levels, consistent with other recent sampling events. The TCE concentration in Proximal Source well MW-10B decreased below the cleanup level from Fall 2020 to Spring 2021.

3.3 Recommended Next Steps

- **Well Sampling** – Following the shutdown of the GWTS in January it was recommended that continued monitoring for chromium be conducted in monitoring wells located around the GWTS. The wells that Messer recommends for monitoring for the duration of the GWTS mothball period are MW-3A, MW-4A, MW-4B, MW-4C, MW-6A, MW-6B, and MW-9B. Chromium concentrations in monitoring wells adjacent to the GWTS (such as MW-6A) have not been positively impacted by the GWTS for a period approaching 15 years (EA 2020). The GWTS will need to be removed and the contaminated residual soil excavated to achieve chromium cleanup levels in the affected monitoring wells in the vicinity of the GWTS. Additional monitoring in this area will identify any change to the residual chromium plume concentration or configuration in the period between GWTS shutdown and final soil excavation.

  Messer plans on sampling on a quarterly basis in 2021 and recommends that sampling of monitoring wells in the Attainment Monitoring phase of closure monitoring continue quarterly, as described in the Closure Plan (EA 2018). Per the Closure Plan, Attainment Monitoring can commence when steady state hydrogeological conditions have been restored. Following the shutdown of the GWTS on 3 January 2021, water levels in the vicinity of extraction wells and the infiltration gallery began stabilizing. At the time of the Summer 2021 quarterly sampling event in July 2021, all wells at the site had reached steady state conditions. Therefore, Messer recommends that any wells that have completed Remediation Monitoring be sampled for Attainment Monitoring during future quarterly monitoring events.

  Continued analysis of in-situ performance monitoring parameters at select wells downgradient of treatment rows is also recommended.

- **Easement Agreements and Restrictive Covenants** – Continue to request EPA assistance to obtain the required agreements with non-responsive property owners. EA will continue efforts to obtain agreements as opportunities arise.

- **Padden Parkway Business Park** – Messer will continue to coordinate monitoring activities and remedial system modifications required for commercial real estate development to proceed on the Padden Parkway property.
- **Northern Plume** – Messer will continue to work with EPA to monitor Northern Plume impacts to groundwater and incursion of the Northern Plume into the Boomsnub/Airco Superfund Site OU-3 groundwater plume.

4 REFERENCES

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Figures

MW-40
124

PZ-39
15.0

MW-22D
62.8

MW-20D
79.2

MW-15E
10.3

AMW-59
11.6

MW-14C
74.6

CPU-12
8.59

MW-14E
166

MW-9B
13.6

MW-6A
15.9

MW-6B
38.5

MW-4A
263

MW-4B
87.1

MW-4C
65.0

MW-19D
122

MW-18D
127

MW-18E
4.18

MW-13C
39.8

MW-3A
131

MW-2B
5.90

Monitoring Well Location
with Chromium Concentration (µg/L)
Exceeding Site Cleanup Level

MW-40
124

Monitoring Well Location
with Chromium Concentration (µg/L)
Not Exceeding Site Cleanup Level

MW-20D
79.2

Extraction Well Pipeline

Notes:

1) Only wells sampled for chromium in Winter 2021 are shown.

2) The site-specific cleanup level for chromium is 80 micrograms per liter (µg/L).

Groundwater Flow Direction
Alluvial Aquifer

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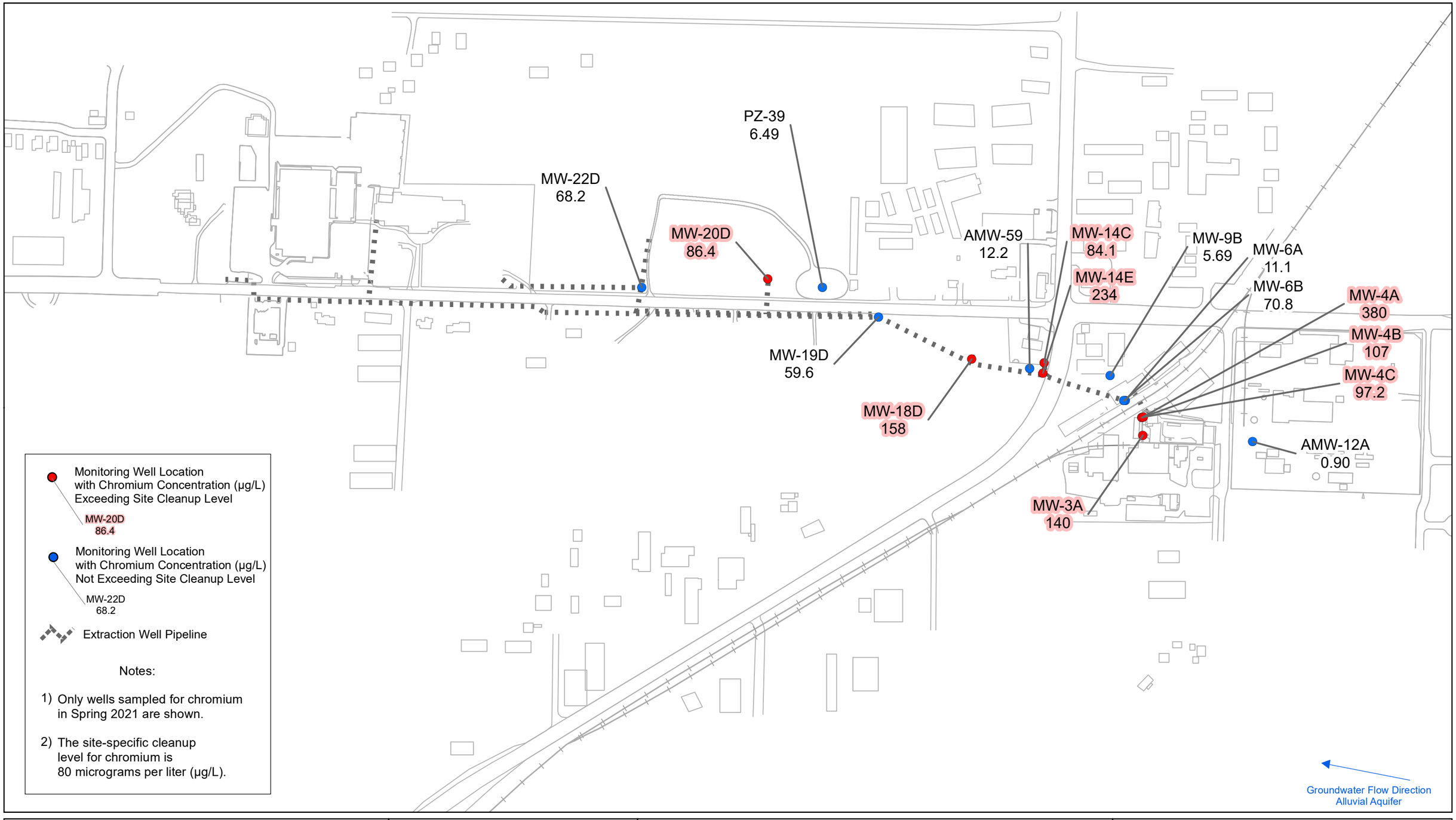
HAZEL DELL, WASHINGTON

EA Project No. 1611303
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_1_CR_Results_Winter21.mxd
File Name: Fig_1_CR_Results_Winter21

FIGURE 1
CHROMIUM SAMPLING RESULTS
WINTER 2021



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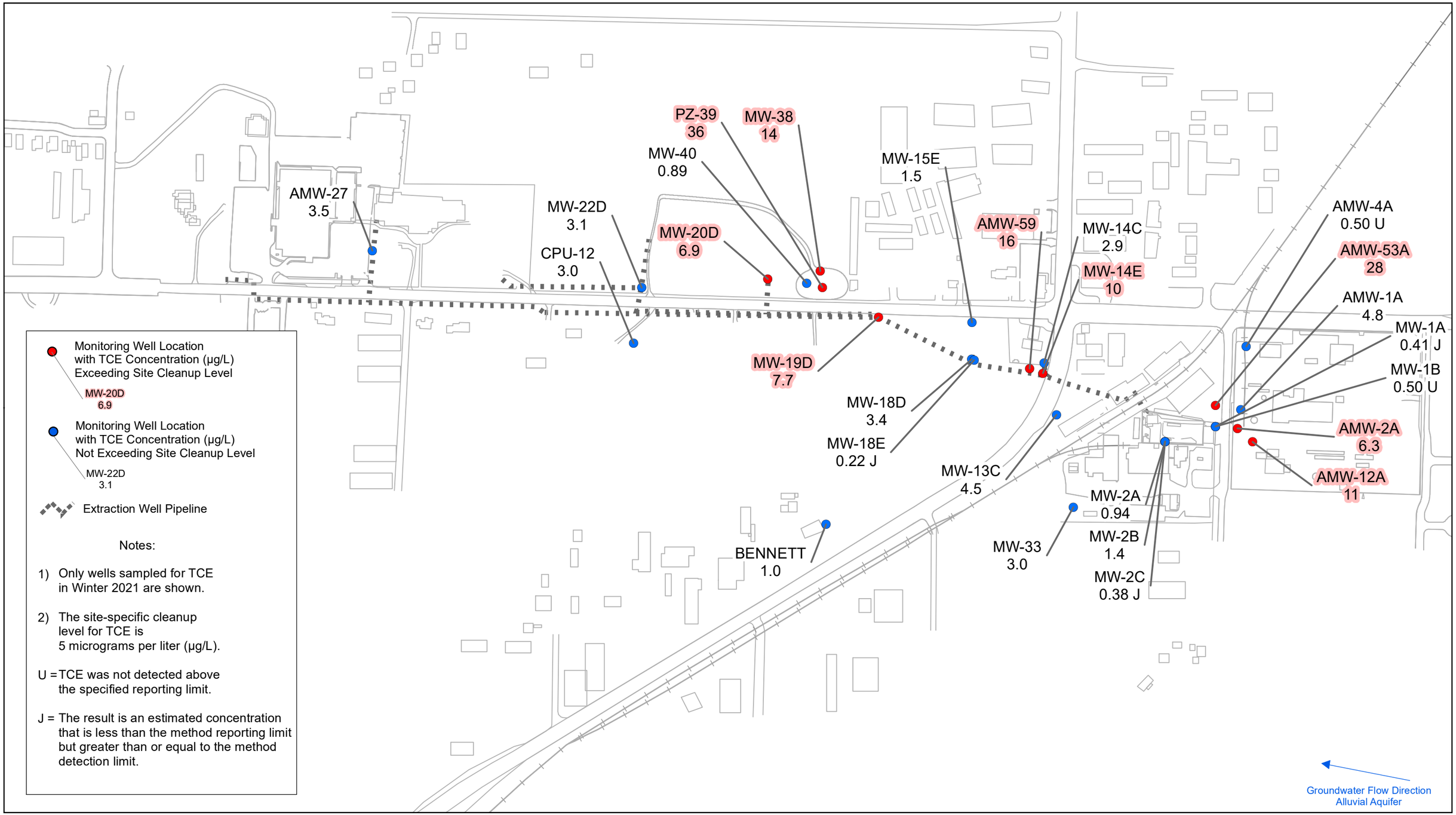
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_2_CR_Results_Spring21.mxd
File Name: Fig_2_CR_Results_Spring21

FIGURE 2
CHROMIUM SAMPLING RESULTS
SPRING 2021



Monitoring Well Location with TCE Concentration (µg/L) Exceeding Site Cleanup Level

MW-20D
6.9

Monitoring Well Location with TCE Concentration (µg/L) Not Exceeding Site Cleanup Level

MW-22D
3.1

Extraction Well Pipeline

Notes:

1) Only wells sampled for TCE in Winter 2021 are shown.

2) The site-specific cleanup level for TCE is 5 micrograms per liter (µg/L).

U = TCE was not detected above the specified reporting limit.

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

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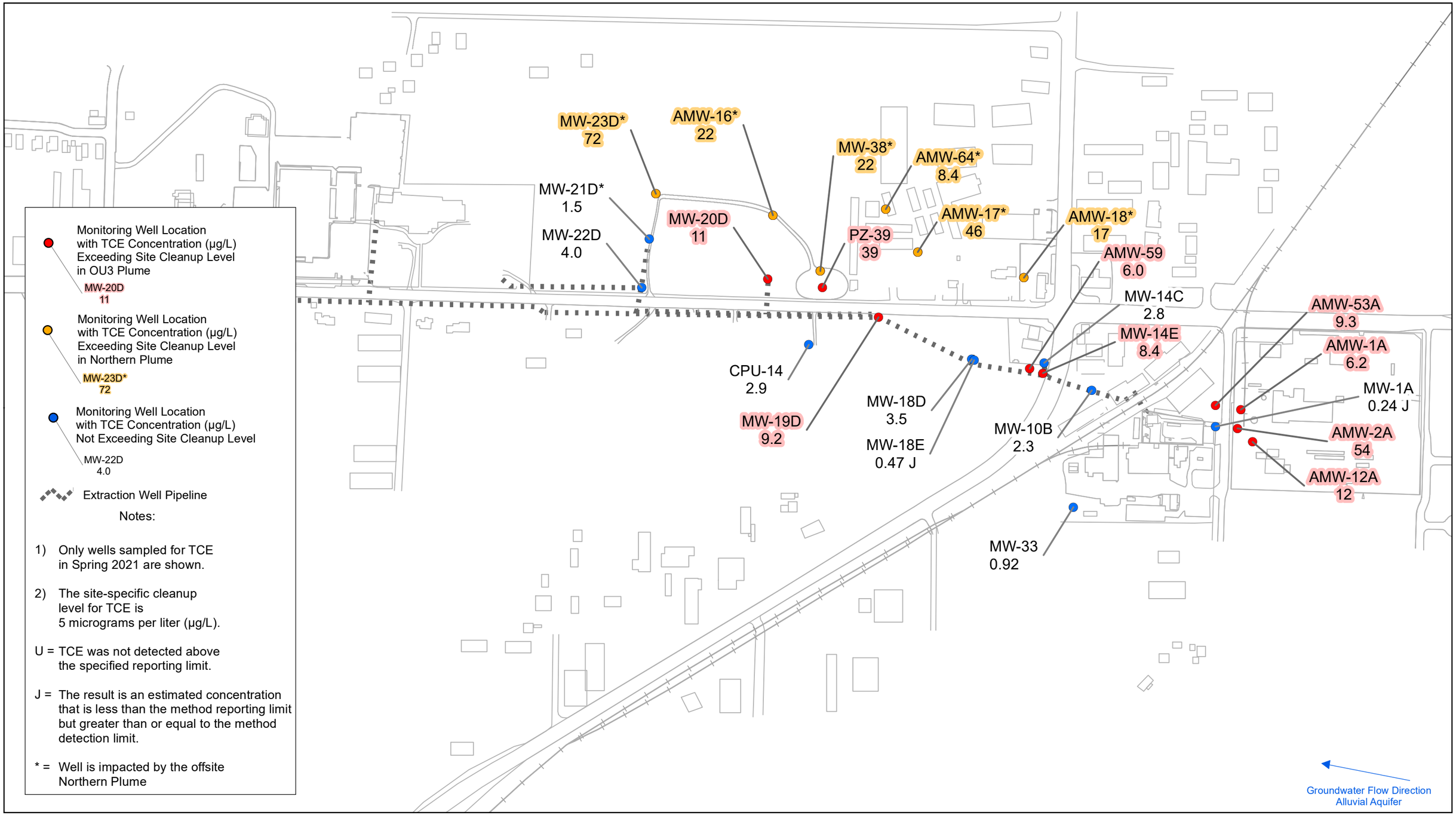
EA Project No. 1611303
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_3_TCE_Results_Winter21.mxd
File Name: Fig_3_TCE_Results_Winter21

FIGURE 3
TRICHLOROETHENE SAMPLING RESULTS
WINTER 2021



Monitoring Well Location with TCE Concentration (µg/L) Exceeding Site Cleanup Level in OU3 Plume

MW-20D
11

Monitoring Well Location with TCE Concentration (µg/L) Exceeding Site Cleanup Level in Northern Plume

MW-23D*
72

Monitoring Well Location with TCE Concentration (µg/L) Not Exceeding Site Cleanup Level

MW-22D
4.0

Extraction Well Pipeline

Notes:

1) Only wells sampled for TCE in Spring 2021 are shown.

2) The site-specific cleanup level for TCE is 5 micrograms per liter (µg/L).

U = TCE was not detected above the specified reporting limit.

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

* = Well is impacted by the offsite Northern Plume

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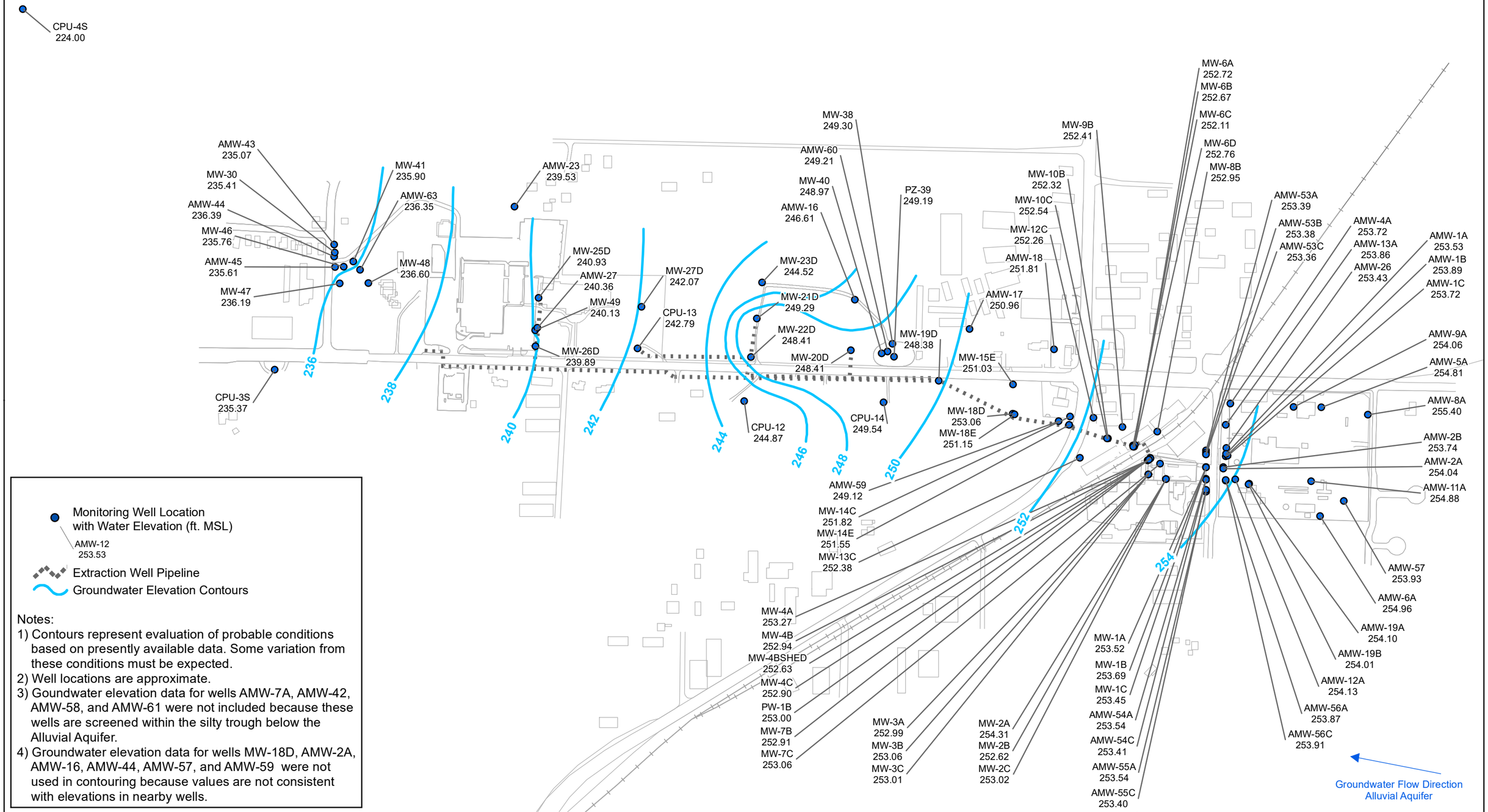
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_4_TCE_Results_Spring21.mxd
File Name: Fig_4_TCE_Results_Spring21

FIGURE 4
TRICHLOROETHENE SAMPLING RESULTS
SPRING 2021



Monitoring Well Location
with Water Elevation (ft. MSL)

AMW-12
253.53

Extraction Well Pipeline

Groundwater Elevation Contours

Notes:

1) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
2) Well locations are approximate.
3) Goundwater elevation data for wells AMW-7A, AMW-42, AMW-58, and AMW-61 were not included because these wells are screened within the silty trough below the Alluvial Aquifer.
4) Groundwater elevation data for wells MW-18D, AMW-2A, AMW-16, AMW-44, AMW-57, and AMW-59 were not used in contouring because values are not consistent with elevations in nearby wells.

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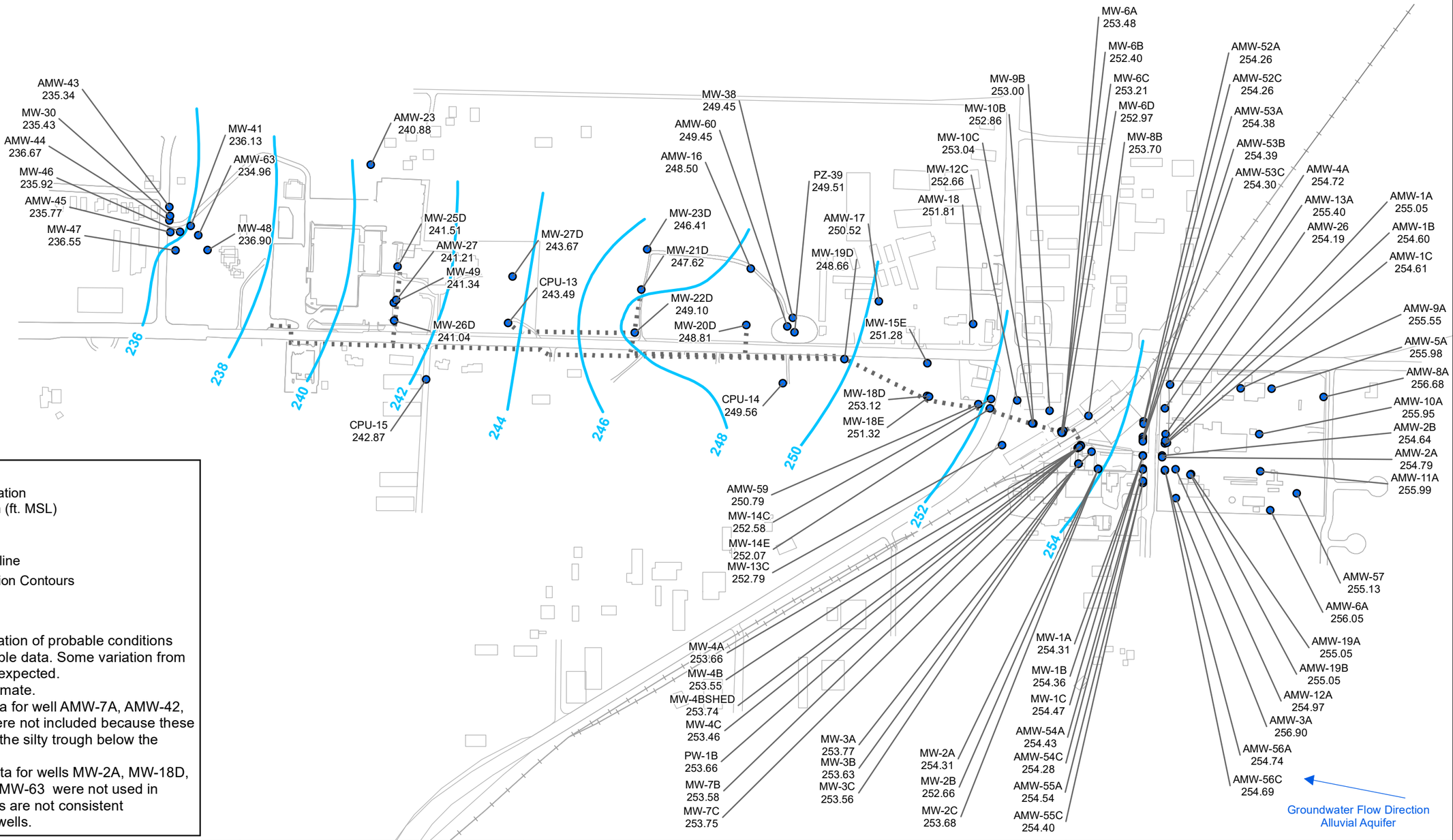
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_5_GW_Alluvial_Winter21.mxd
File Name: Fig_5_GW_Alluvial_Winter21

FIGURE 5
ALLUVIAL AQUIFER GROUNDWATER CONTOURS
WINTER 2021



Monitoring Well Location
with Water Elevation (ft. MSL)
AMW-1A
255.05

Extraction Well Pipeline

Groundwater Elevation Contours

Notes:
1) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
2) Well locations are approximate.
3) Goundwater elevation data for well AMW-7A, AMW-42, AMW-58, and AMW-61 were not included because these wells are screened within the silty trough below the Alluvial Aquifer.
4) Groundwater elevation data for wells MW-2A, MW-18D, AMW-3A, AMW-44, and AMW-63 were not used in contouring because values are not consistent with elevations in nearby wells.

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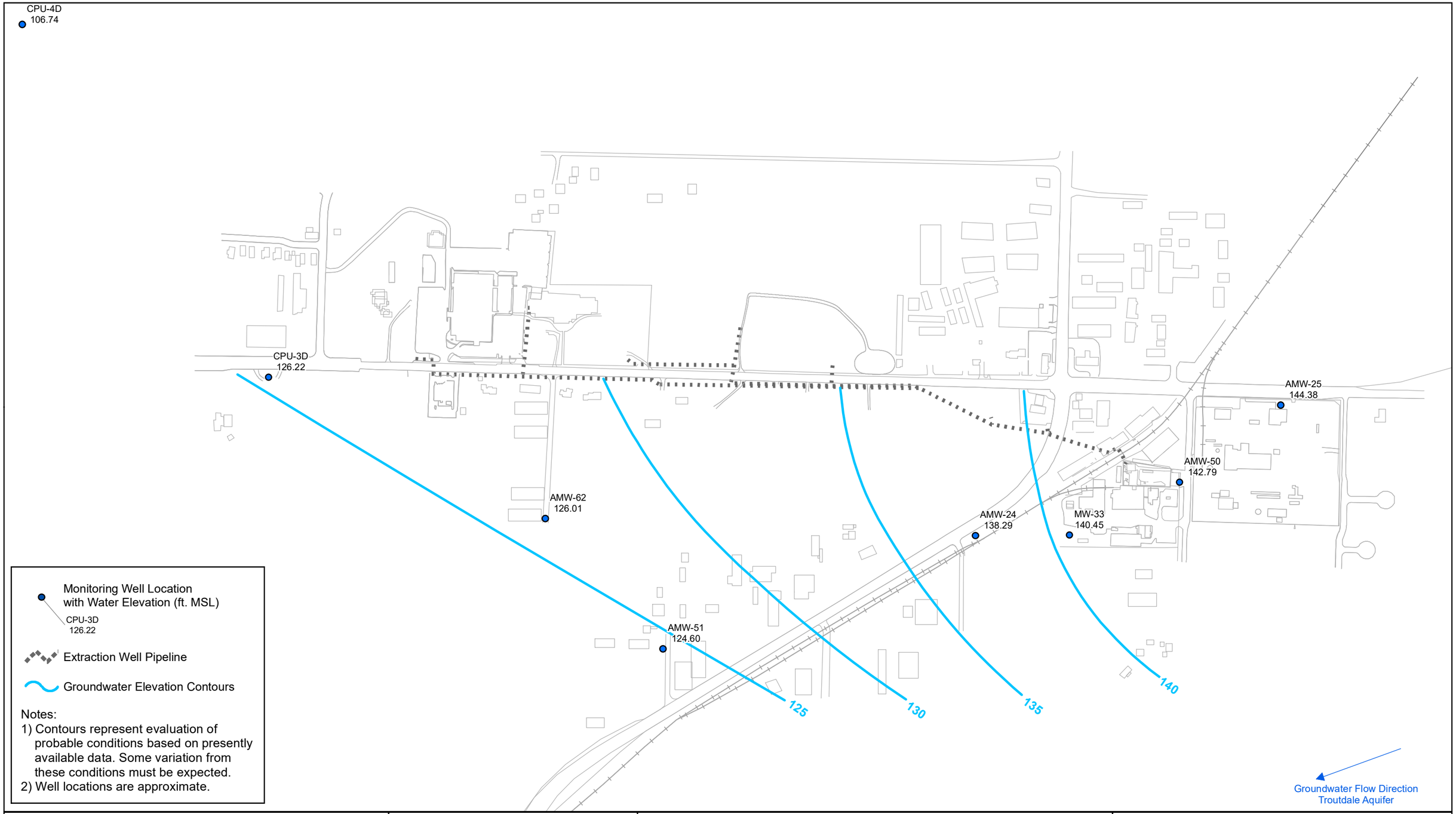
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_6_GW_Alluvial_Spring21.mxd
File Name: Fig_6_GW_Alluvial_Spring21

FIGURE 6
ALLUVIAL AQUIFER GROUNDWATER CONTOURS
SPRING 2021



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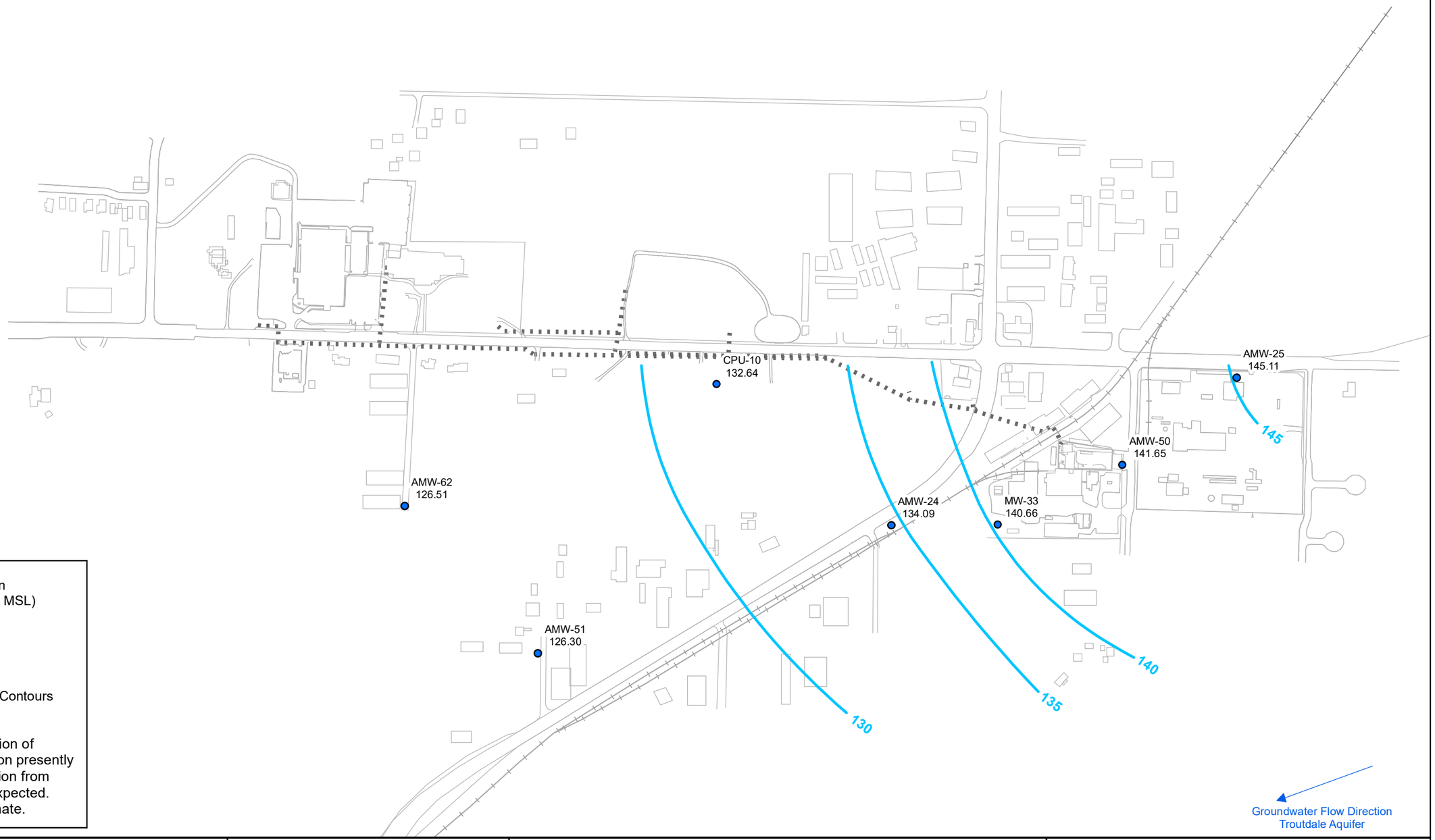
EA Project No. 1611303
File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_7_GW_Troutdale_Winter21.mxd
File Name: Fig_7_GW_Troutdale_Winter21

FIGURE 7
TROUTDALE AQUIFER GROUNDWATER CONTOURS
WINTER 2021



Monitoring Well Location
with Water Elevation (ft. MSL)

AMW-62
126.51

Extraction Well Pipeline

Groundwater Elevation Contours

Notes:
1) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
2) Well locations are approximate.

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File Location: C:\Users\hdennis\Desktop\Messer2021_Maps\Fig_8_GW_Troutdale_Spring21.mxd
File Name: Fig_8_GW_Troutdale_Spring21

FIGURE 8
TROUTDALE AQUIFER GROUNDWATER CONTOURS
SPRING 2021

Tables

Table 1. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Winter 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-1A	M	34.83	24.56	34.56	10	284.09	30.56	253.53
AMW-1B	M	56.49	46.49	56.49	10	284.11	30.22	253.89
AMW-1C	M	79.00	69	79	10	284.06	30.34	253.72
AMW-2A	M	34.51	24.51	34.51	10	284.03	29.99	254.04
AMW-2B	M	59.00	47	57	10	284.11	30.37	253.74
AMW-3A	M	34.00	24.5	34.5	10	283.92	30.02	253.72
AMW-4A	M	34.20	23.9	33.9	10	283.74	29.33	254.81
AMW-5A	M	34.60	24.5	34.5	10	284.14	29.60	254.96
AMW-6A	M/D	33.90	24	34	10	284.56	29.94	255.08
AMW-7A	M/D	34.09	24.25	34.25	10	285.02	30.09	255.40
AMW-8A	M	34.50	24.5	34.5	10	285.49	29.86	254.06
AMW-9A	M	34.50	24.5	34.5	10	283.92	28.33	254.88
AMW-11A	M/D	33.84	23.5	33.5	10	283.21	29.61	254.13
AMW-12A	M	34.55	24.35	34.35	10	283.74	30.02	253.86
AMW-13A	M	34.30	23.8	33.8	10	283.88	19.50	246.61
AMW-16	M	91.28	81.13	91.13	10	266.11	9.29	250.96
AMW-17	M/D	90.38	81	91	10	260.42	26.99	251.81
AMW-18	M	103.65	92.65	102.65	10	278.8	29.84	254.10
AMW-19A	M	35.25	25	35	10	283.94	29.96	254.01
AMW-19B	M	54.50	44.5	54.5	10	283.97	38.73	239.53
AMW-23	M	85.00	75	85	10	278.26	126.43	138.29
AMW-24	M/D	200.00	190	200	10	264.72	138.56	144.38
AMW-25	M/D	225.00	215	225	10	282.94	29.59	253.43
AMW-26	M/D	34.50	24.2	34.2	10	283.02	32.24	240.36
AMW-43	M/D	85.00	72	85	13	247.71	12.64	235.07
AMW-44	M/D	81.00	71	81	10	247.82	11.43	236.39
AMW-45	M/D	77.00	67	77	10	244.87	9.26	235.61
AMW-50	M/D	195.19	185.19	195.19	10	282.78	139.99	142.79
AMW-51	M/D	195.70	185.7	195.7	10	258.44	133.84	124.60

Table 1. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Winter 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-53A	M	32.63	22.33	32.33	10	281.05	27.66	253.39
AMW-53B	M	54.55	44.55	54.55	10	281.2	27.82	253.38
AMW-53C	M	74.21	64.21	74.21	10	281.41	28.05	253.36
AMW-54A	M	34.30	24.3	34.3	10	283.31	29.77	253.54
AMW-54C	M	74.74	64.74	74.74	10	283.12	29.71	253.41
AMW-55A	M	30.83	20.83	30.83	10	282.11	28.57	253.54
AMW-55C	M	68.45	58.45	68.45	10	282.71	29.31	253.40
AMW-56A	M	35.24	25.24	35.24	10	283.67	29.8	253.87
AMW-56C	M	67.40	57.4	67.4	10	283.67	29.76	253.91
AMW-58	M	114.73	109.43	114.43	5	280.08	60.56	219.52
AMW-60	M	109.50	104.2	109.2	5	266.45	17.24	249.21
AMW-61	M	97.16	91.86	96.86	5	273.78	42.28	231.50
AMW-62	M/D	196.03	185.73	195.73	10	258.66	132.65	126.01
AMW-63	M	86.43	76.13	86.13	10	257.42	21.07	236.35
BENNETT	Private	197.00	180	180		260	132.68	127.32
CPU-3S	M	72.72	65.72	70.72	5	246.77	11.4	235.37
CPU-3D	M/D	219.38	212.38	217.38	5	246.77	120.55	126.22
CPU-4S	M	69.30	62.3	67.3	5	234.1	10.05	224.00
CPU-4D	M	210.00	203	208	5	234.05	127.36	106.74
CPU-12	M	72.20	61.12	71.12	10	275.23	30.36	244.87
CPU-13	E	82.70	71.7	81.7	10	278.99	36.20	242.79
CPU-14	M	71.43	60.43	70.43	10	257.56	8.02	249.54
MW-1A	M	38.56	28.27	38.27	10	285.49	41.97	243.52
MW-1B	M	59.79	54.49	59.49	5	285.47	31.78	253.69
MW-1C	M	77.44	72.14	77.14	5	285.45	32.00	253.45
MW-2A	M	37.39	32.09	37.09	5	282.57	28.26	254.31
MW-2B	M	57.94	52.64	57.64	5	282.49	29.87	252.62
MW-2C	M	86.94	81.64	86.64	5	282.43	29.41	253.02
MW-3A	M	32.70	22.3	32.3	10	280.21	27.22	252.99

Table 1. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Winter 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
MW-3B	M	56.69	51.39	56.39	5	280.33	27.27	253.06
MW-3C	M	83.69	78.39	83.39	5	280.35	27.34	253.01
MW-4A	M	37.70	26.8	36.8	10	280.3	27.03	253.27
MW-4B	M	44.80	39.7	44.7	5	280.15	27.21	252.94
MW-4BSHED	M	58.20	52.9	57.9	5	280.47	27.84	252.63
MW-4C	M	80.00	74.7	79.7	5	279.9	27.01	252.90
MW-6A	M	31.50	18.25	28.25	10	278.77	26.05	252.72
MW-6B	E	59.00	45.75	55.75	10	273.32	20.65	252.67
MW-6C	M	84.80	71.55	81.55	10	278.65	26.54	252.11
MW-6D	M	113.70	100.45	110.45	10	278.9	36.14	242.76
MW-7B	M	57.70	47	57	10	280.02	27.11	252.91
MW-7C	M	80.50	69	79	10	279.94	26.88	253.06
MW-8B	M	60.00	46.9	56.9	10	280.7	27.75	252.95
MW-9B	M	58.00	44.9	54.9	10	275.42	23.01	252.41
MW-10B	E	61.50	48	58	10	273.24	20.92	252.32
MW-10C	E	81.50	70	80	10	273.25	20.71	252.54
MW-12C	M	82.71	71.2	81.2	10	274.31	22.05	252.26
MW-13C	M	76.53	65.03	75.03	10	271.97	19.59	252.38
MW-14C	E	81.50	70	80	10	271.22	19.40	251.82
MW-14E	E	126.00	115	125	10	268.95	17.40	251.55
MW-15E	M	107.23	96.22	106.22	10	265.73	14.70	251.03
MW-18D	E	94.40	73.4	93.4	20	262.74	9.68	253.06
MW-18E	M	123.57	112.69	122.69	10	261.77	10.62	251.15
MW-19D	E	82.20	76.2	91.2	15	257.98	9.60	248.38
MW-20D	E	87.00	76	86	10	269.43	21.02	248.41
MW-21D	E	67.00	64.4	74.4	10	265.98	19.69	246.29
MW-22D	E	65.20	54	64	10	269.02	20.61	248.41
MW-23D	M	88.10	71.86	86.86	15	265.33	20.81	244.52
MW-25D	E	79.05	67.85	77.85	10	272.13	31.20	240.93

Table 1. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Winter 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
MW-26D	E	94.20	83	93	10	272.86	32.97	239.89
MW-27D	M	71.20	65.07	75.07	10	273.23	31.16	242.07
MW-30	M/D	63.00	51	61	10	246.75	11.34	235.41
MW-33	M/D	215.00	205	215	10	272.55	132.10	140.45
MW-38	M	81.90	76.92	81.92	5	263.92	14.62	249.30
MW-47	M/D	83.00	72.7	82.7	10	246.39	10.20	236.19
MW-49	E	81.50	71.2	81.2	10	271.68	31.55	240.13
PW-1B	E	58.00	48	58	10	276.56	23.56	253.00
PZ-1	PZ	38.79	23.79	38.79	15	284.15	29.12	255.03
PZ-2	PZ	42.97	27.97	42.97	15	286.54	31.18	255.36

NOTES :

Water levels were measured on 5 February 2021.
Groundwater surface elevation is determined by subtracting the depth to water from the top-of-casing elevation.

btoc = Below top of casing.
E = Extraction well.
E/M = Extraction well (inactive) with pump pulled; sampled using monitoring well techniques.
ft = Feet.
M = Monitoring well.
M/D = Monitoring well with dedicated pump.
MSL = Mean sea level.
NA = Not applicable.
NM = Not measured.
PZ = Piezometer.
TOC = Top of casing.

TABLE 2: SUMMARY OF CHROMIUM AND SELECTED VOC CONCENTRATIONS IN GROUNDWATER SAMPLES - WINTER 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Church of God Wells	AMW-27	February 2021	NA	3.5	1.1	0.50 U	0.50 U	0.10 J	0.29 J	0.50 U
Church of God Wells	CPU-12	February 2021	8.59	3	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Church of God Wells	MW-22D	February 2021	62.8	3.1	1.7	0.50 U	0.50 U	0.10 J	0.50 U	0.50 U
Intermediate Plume Wells	AMW-59	February 2021	11.6	**16**	0.50 U	0.50 U	0.50 U	**2.4**	18	0.50 U
Intermediate Plume Wells	MW-14C	February 2021	74.6	2.9	0.71	0.15 J	0.11 J	0.50 U	0.50 U	0.31 J
Intermediate Plume Wells	MW-14E	February 2021	**166**	**10**	2.4	0.50 U	0.18 J	0.16 J	0.24 J	0.50 U
Intermediate Plume Wells	MW-15E	February 2021	10.3	1.5	0.26 J	0.12 J	0.50 U	0.50 U	0.50 U	0.50 U
Intermediate Plume Wells	MW-18D	February 2021	**127**	3.4	0.61	0.50 U	0.50 U	0.50 U	3.8	0.50 U
Intermediate Plume Wells	MW-18E	February 2021	4.18	0.22 J	0.50 U	0.50 U	0.50 U	0.50 U	0.74	0.50 U
Intermediate Plume Wells	MW-19D	February 2021	**122**	**7.7**	1	0.50 U	0.50 U	0.25 J	1.7	0.50 U
Intermediate Plume Wells	MW-20D	February 2021	79.2	**6.9**	0.6	0.50 U	0.50 U	0.50 U	0.50 U	0.20 J
Intermediate Plume Wells	MW-40	February 2021	**124**	0.89	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.24 J
Intermediate Plume Wells	PZ-39	February 2021	15	**36**	0.62	1.5	0.65	**1.8**	0.51	0.50 U
Northern Plume	MW-38	February 2021	NA	**14**	0.51	0.19 J	0.090 J	0.11 J	0.50 U	0.50 U
Proximal Source Wells	MW-02A	February 2021	NA	0.94	0.52	0.14 J	0.50 U	0.50 U	0.50 U	0.50 U
Proximal Source Wells	MW-02B	February 2021	5.9	1.4	0.35 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Proximal Source Wells	MW-02C	February 2021	NA	0.38 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Proximal Source Wells	MW-03A	February 2021	**131**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-04A	February 2021	**263**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-04B	February 2021	**87.1**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-04C	February 2021	65	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-06A	February 2021	15.9	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-06B	February 2021	38.5	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-09B	February 2021	13.6	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-13C	February 2021	39.8	4.5	0.91	0.50 U	0.090 J	0.50 U	0.50 U	0.32 J
TCE Source Wells	AMW-01A	February 2021	NA	4.8	0.82	7.7	0.98	0.43 J	12	0.50 U
TCE Source Wells	AMW-02A	February 2021	NA	**6.3**	0.86	0.25 J	0.50 U	0.13 J	0.23 J	0.50 U
TCE Source Wells	AMW-04A	February 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TCE Source Wells	AMW-12A	February 2021	NA	**11**	0.43 J	3.3	0.63	0.50 U	0.090 J	0.50 U
TCE Source Wells	AMW-53A	February 2021	NA	**28**	0.96	28	4	0.26 J	0.39 J	0.50 U
TCE Source Wells	MW-01A	February 2021	NA	0.41 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TCE Source Wells	MW-01B	February 2021	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Troutdale Wells	BENNETT	February 2021	NA	1	0.50 U	0.50 U	0.50 U	0.50 U	0.19 J	0.50 U

TABLE 2: SUMMARY OF CHROMIUM AND SELECTED VOC CONCENTRATIONS IN GROUNDWATER SAMPLES - WINTER 2021

Troutdale Wells	MW-33	February 2021	NA	3	0.50 U	0.50 U	0.50 U	0.28 J	0.7	0.50 U
Cleanup or Guidance Level			80	5	5	2,400	200	1	70	1

NOTES:

Only commonly detected VOCs are included in this table

Results are in micrograms per liter (µg/L).

Results in **blue bold** exceed the established cleanup or guidance level for the compound.

The concentrations listed in the table are the maximum of the primary and duplicate samples (as applicable).

1,1,1-TCA = 1,1,1-Tricholoroethane

1,1-DCE = 1,1-Dichloroethene

BDCM = Bromodichloromethane.

CFC-11 = Trichlorofluoromethane.

Cis-1,2-DCE = cis-1,2-Dichloroethene.

PCE = Tetrachloroethene.

TCE = Trichloroethene.

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit

NA = The sample was not analyzed for the specified compound.

U = Analyte not detected above the specified reporting limit.

Table 3. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Spring 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-1A	M	34.83	24.56	34.56	10	284.09	29.04	255.05
AMW-1B	M	56.49	46.49	56.49	10	284.11	29.51	254.60
AMW-1C	M	79.00	69	79	10	284.06	29.45	254.61
AMW-2A	M	34.51	24.51	34.51	10	284.03	29.24	254.79
AMW-2B	M	59.00	47	57	10	284.11	29.47	254.64
AMW-3A	M	34.00	24.5	34.5	10	283.92	26.94	256.98
AMW-4A	M	34.20	23.9	33.9	10	283.74	29.02	254.72
AMW-5A	M	34.60	24.5	34.5	10	284.14	28.16	255.98
AMW-6A	M/D	33.90	24	34	10	284.56	28.51	256.05
AMW-7A	M/D	34.09	24.25	34.25	10	285.02	28.31	256.71
AMW-8A	M	34.50	24.5	34.5	10	285.49	18.81	266.68
AMW-9A	M	34.50	24.5	34.5	10	283.92	28.37	255.55
AMW-11A	M/D	33.84	23.5	33.5	10	283.21	27.22	255.99
AMW-12A	M	34.55	24.35	34.35	10	283.74	28.77	254.97
AMW-13A	M	34.30	23.8	33.8	10	283.88	28.48	255.40
AMW-16	M	91.28	81.13	91.13	10	266.11	17.61	248.50
AMW-17	M/D	90.38	81	91	10	260.42	9.73	250.52
AMW-18	M	103.65	92.65	102.65	10	278.8	26.99	251.81
AMW-19A	M	35.25	25	35	10	283.94	28.89	255.05
AMW-19B	M	54.50	44.5	54.5	10	283.97	28.92	255.05
AMW-23	M	85.00	75	85	10	278.26	37.38	240.88
AMW-24	M/D	200.00	190	200	10	264.72	130.63	134.09
AMW-25	M/D	225.00	215	225	10	282.94	137.83	145.11
AMW-26	M/D	34.50	24.2	34.2	10	283.02	28.83	254.19
AMW-43	M/D	85.00	72	85	13	247.71	12.37	235.34
AMW-44	M/D	81.00	71	81	10	247.82	11.15	236.67
AMW-45	M/D	77.00	67	77	10	244.87	9.10	235.77
AMW-50	M/D	195.19	185.19	195.19	10	282.78	141.13	141.65
AMW-51	M/D	195.70	185.7	195.7	10	258.44	132.14	126.30

Table 3. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Spring 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
AMW-53A	M	32.63	22.33	32.33	10	281.05	26.67	254.38
AMW-53B	M	54.55	44.55	54.55	10	281.2	26.81	254.39
AMW-53C	M	74.21	64.21	74.21	10	281.41	27.11	254.30
AMW-54A	M	34.30	24.3	34.3	10	283.31	28.88	254.43
AMW-54C	M	74.74	64.74	74.74	10	283.12	28.84	254.28
AMW-55A	M	30.83	20.83	30.83	10	282.11	27.57	254.54
AMW-55C	M	68.45	58.45	68.45	10	282.71	28.31	254.40
AMW-56A	M	35.24	25.24	35.24	10	283.67	28.93	254.74
AMW-56C	M	67.40	57.4	67.4	10	283.67	28.98	254.69
AMW-58	M	114.73	109.43	114.43	5	280.08	59.92	220.16
AMW-60	M	109.50	104.2	109.2	5	266.45	17.00	249.45
AMW-61	M	97.16	91.86	96.86	5	273.78	45.20	228.58
AMW-62	M/D	196.03	185.73	195.73	10	258.66	132.15	126.51
AMW-63	M	86.43	76.13	86.13	10	257.42	22.46	234.96
BENNETT	Private	197.00	180	180		260	132.68	127.32
CPU-13	E	82.70	71.7	81.7	10	278.99	35.50	243.49
CPU-14	M	71.43	60.43	70.43	10	257.56	8.00	249.56
MW-1A	M	38.56	28.27	38.27	10	285.49	31.18	254.31
MW-1B	M	59.79	54.49	59.49	5	285.47	31.11	254.36
MW-1C	M	77.44	72.14	77.14	5	285.45	30.98	254.47
MW-2A	M	37.39	32.09	37.09	5	282.57	28.26	254.31
MW-2B	M	57.94	52.64	57.64	5	282.49	29.83	252.66
MW-2C	M	86.94	81.64	86.64	5	282.43	28.75	253.68
MW-3A	M	32.70	22.3	32.3	10	280.21	26.44	253.77
MW-3B	M	56.69	51.39	56.39	5	280.33	26.70	253.63
MW-3C	M	83.69	78.39	83.39	5	280.35	26.79	253.56
MW-4A	M	37.70	26.8	36.8	10	280.3	26.64	253.66
MW-4B	M	44.80	39.7	44.7	5	280.15	26.60	253.55
MW-4BSHED	M	58.20	52.9	57.9	5	280.47	26.73	253.74

Table 3. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Spring 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
MW-4C	M	80.00	74.7	79.7	5	279.9	26.45	253.46
MW-6A	M	31.50	18.25	28.25	10	278.77	25.29	253.48
MW-6B	E	59.00	45.75	55.75	10	273.32	20.92	252.40
MW-6C	M	84.80	71.55	81.55	10	278.65	25.44	253.21
MW-6D	M	113.70	100.45	110.45	10	278.9	25.93	252.97
MW-7B	M	57.70	47	57	10	280.02	26.44	253.58
MW-7C	M	80.50	69	79	10	279.94	26.19	253.75
MW-8B	M	60.00	46.9	56.9	10	280.7	27.00	253.70
MW-9B	M	58.00	44.9	54.9	10	275.42	22.42	253.00
MW-10B	E	61.50	48	58	10	273.24	20.38	252.86
MW-10C	E	81.50	70	80	10	273.25	20.21	253.04
MW-12C	M	82.71	71.2	81.2	10	274.31	21.65	252.66
MW-13C	M	76.53	65.03	75.03	10	271.97	19.18	252.79
MW-14C	E	81.50	70	80	10	271.22	18.64	252.58
MW-14E	E	126.00	115	125	10	268.95	16.88	252.07
MW-15E	M	107.23	96.22	106.22	10	265.73	14.45	251.28
MW-18D	E	94.40	73.4	93.4	20	262.74	9.62	253.12
MW-18E	M	123.57	112.69	122.69	10	261.77	10.45	251.32
MW-19D	E	82.20	76.2	91.2	15	257.98	9.32	248.66
MW-20D	E	87.00	76	86	10	269.43	20.62	248.81
MW-21D	E	67.00	64.4	74.4	10	265.98	18.36	247.62
MW-22D	E	65.20	54	64	10	269.02	19.92	249.10
MW-23D	M	88.10	71.86	86.86	15	265.33	18.92	246.41
MW-25D	E	79.05	67.85	77.85	10	272.13	30.62	241.51
MW-26D	E	94.20	83	93	10	272.86	31.82	241.04
MW-27D	M	71.20	65.07	75.07	10	273.23	29.56	243.67
MW-30	M/D	63.00	51	61	10	246.75	11.32	235.43
MW-33	M/D	215.00	205	215	10	272.55	131.89	140.66
MW-38	M	81.90	76.92	81.92	5	263.92	14.47	249.45

Table 3. Summary of Water Level Gauging Data and Groundwater Surface Elevations—Spring 2021

Well ID	Well Type	Total Depth (ft btoc)	Top of Screen (ft btoc)	Bottom of Screen (ft btoc)	Screen Length (ft)	TOC Elevation (ft MSL)	Depth to Water (ft btoc)	Groundwater Surface Elevation (ft MSL)
MW-47	M/D	83.00	72.7	82.7	10	246.39	9.84	236.55
MW-49	E	81.50	71.2	81.2	10	271.68	30.34	241.34
PW-1B	E	58.00	48	58	10	276.56	22.90	253.66
PZ-1	PZ	38.79	23.79	38.79	15	284.15	28.05	256.10
PZ-2	PZ	42.97	27.97	42.97	15	286.54	29.96	256.58

NOTES :

Water levels were measured on 23 April 2021.

Groundwater surface elevation is determined by subtracting the depth to water from the top-of-casing elevation.

btoc = Below top of casing.
E = Extraction well.
E/M = Extraction well (inactive) with pump pulled; sampled using monitoring well techniques.
ft = Feet.
M = Monitoring well.
M/D = Monitoring well with dedicated pump.
MSL = Mean sea level.
NA = Not applicable.
NM = Not measured.
PZ = Piezometer.
TOC = Top of casing.

TABLE 4: SUMMARY OF CHROMIUM AND SELECTED VOC CONCENTRATIONS IN GROUNDWATER SAMPLES - SPRING 2021

Well Group	Well	Sampling Event	Chromium	TCE	PCE	CFC-11	1,1,1-TCA	1,1-DCE	Cis-1,2-DCE	BDCM
Church of God Wells	MW-22D	Spring 2021	68.2	4	1.8	0.13 J	0.50 U	0.090 J	0.50 U	0.50 U
Intermediate Plume Wells	AMW-59	Spring 2021	12.2	**6**	0.50 U	0.50 U	0.50 U	0.98	11	0.50 U
Intermediate Plume Wells	CPU-14	Spring 2021	NA	2.9	0.50 U	0.50 U	0.10 J	0.50 U	0.50 U	0.50 U
Intermediate Plume Wells	MW-14C	Spring 2021	**84.1**	2.8	0.58	0.12 J	0.090 J	0.50 U	0.080 J	0.11 J
Intermediate Plume Wells	MW-14E	Spring 2021	**234**	**8.4**	2.9	0.50 U	0.080 J	0.50 U	0.20 J	0.50 U
Intermediate Plume Wells	MW-18D	Spring 2021	**158**	3.5	0.57	0.50 U	0.50 U	0.50 U	4	0.12 J
Intermediate Plume Wells	MW-18E	Spring 2021	NA	0.47 J	0.50 U	0.50 U	0.50 U	0.50 U	0.69	0.50 U
Intermediate Plume Wells	MW-19D	Spring 2021	59.6	**9.2**	1.3	0.50 U	0.50 U	0.29 J	4.3	0.50 U
Intermediate Plume Wells	MW-20D	Spring 2021	**86.4**	**11**	1.1	0.50 U	0.10 J	0.13 J	0.10 J	0.50 U
Intermediate Plume Wells	PZ-39	Spring 2021	6.49	**39**	0.8	0.91	0.51	**1.5**	1.8	0.50 U
Northern Plume	MW-21D	Spring 2021	NA	1.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Northern Plume	MW-38	Spring 2021	NA	**22**	0.73	0.12 J	0.080 J	0.50 U	0.50 U	0.50 U
Northern Plume Well	AMW-16	Spring 2021	NA	**22**	0.11 J	0.50 U	0.21 J	0.20 J	0.10 J	0.50 U
Northern Plume Well	AMW-17	Spring 2021	NA	**46**	0.22 J	0.50 U	0.090 J	0.50 U	0.50 U	0.50 U
Northern Plume Well	AMW-18	Spring 2021	NA	**17**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Northern Plume Well	AMW-64	Spring 2021	NA	**8.4**	0.50 U	0.12 J	0.10 J	0.50 U	0.070 J	0.50 U
Northern Plume Well	MW-23D	Spring 2021	NA	**72**	0.50 U	0.50 U	0.40 J	0.8	0.25 J	0.50 U
Proximal Source Wells	MW-03A	Spring 2021	**140**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-04A	Spring 2021	**380**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-04B	Spring 2021	**107**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-04C	Spring 2021	**97.2**	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-06A	Spring 2021	11.1	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-06B	Spring 2021	70.8	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-09B	Spring 2021	5.69	NA	NA	NA	NA	NA	NA	NA
Proximal Source Wells	MW-10B	Spring 2021	NA	2.3	0.51	0.13 J	0.50 U	0.50 U	0.50 U	0.50 U
TCE Source Wells	AMW-01A	Spring 2021	NA	**6.2**	0.20 J	8.8	0.67	0.50 U	0.50 U	0.50 U
TCE Source Wells	AMW-02A	Spring 2021	NA	**54**	1	5.5	1.4	0.50 U	0.47 J	0.50 U
TCE Source Wells	AMW-12A	Spring 2021	0.9	**12**	0.47 J	2.7	0.46 J	0.50 U	0.18 J	0.50 U
TCE Source Wells	AMW-53A	Spring 2021	NA	**9.3**	0.43 J	6.7	0.81	0.50 U	0.14 J	0.50 U
TCE Source Wells	MW-01A	Spring 2021	NA	0.24 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Troutdale Wells	MW-33	Spring 2021	NA	0.92	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cleanup or Guidance Level			80	5	5	2,400	200	1	70	1

TABLE 4: SUMMARY OF CHROMIUM AND SELECTED VOC CONCENTRATIONS IN GROUNDWATER SAMPLES - SPRING 2021

NOTES:

Only commonly detected VOCs are included in this table

Results are in micrograms per liter (µg/L).

Results in **blue bold** exceed the established cleanup or guidance level for the compound.

The concentrations listed in the table are the maximum of the primary and duplicate samples (as applicable).

1,1,1-TCA = 1,1,1-Tricholoroethane

1,1-DCE = 1,1-Dichloroethene

BDCM = Bromodichloromethane.

CFC-11 = Trichlorofluoromethane.

Cis-1,2-DCE = cis-1,2-Dichloroethene.

PCE = Tetrachloroethene.

TCE = Trichloroethene.

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit

NA = The sample was not analyzed for the specified compound.

U = Analyte not detected above the specified reporting limit.

TABLE 5: SUMMARY OF RECENT CHROMIUM CONCENTRATIONS

Well Group	Well	Fall 2019	January 2020	Spring 2020	Fall 2020	February 2021	Spring 2021
Church of God	CPU-12	8 J	NA	NA	7.0 J	8.59	NA
	MW-22D	17.9	NA	NA	66.7	62.8	68.2
Intermediate Plume Wells	AMW-59	NA	70.9	**100**[a]	18.2[a]	11.6	12.2, (6.29[a])
	MW-14C	48.1	62.9	73.8	10.2	74.6	**84.1** (76.7[a])
	MW-14E	27.5	38.1	54.4	**173**	**166**	**234**
	MW-15E	NA	NA	NA	NA	10.3	NA
	MW-18D	74.2	47.9	**89.8**	15.8[a]	**127**[a]	**158** (30.2[a])
	MW-18E	69.2	NA	8.4 U [a]	2.9 J [a]	4.18[a]	NA
	MW-19D	**87.5**	**398 (119[a])**	**171**	38.4[a]	**122**	59.6 (33.9[a])
	MW-20D	48.8	NA	NA	59.9	79.2	**86.4** (53.4[a])
	MW-40	51.6	NA	NA	**103**	**124**	NA
	PZ-39	NA	NA	NA	3.2 J	15	6.49
Proximal Source Wells	MW-13C	NA	NA	NA	NA	39.8	NA
	MW-2B	NA	NA	NA	NA	5.9	NA
	MW-3A	**105**	NA	NA	NA	**131**	**140**
	MW-4A	**371**	NA	NA	**556**	**263**	**380**
	MW-4B	**366**	NA	NA	**318**	**87.1**	**107**
	MW-4C	68.7	NA	NA	NA	65	**97.2**
	MW-6A	**128**	NA	NA	**149**	15.9	11.1
	MW-6B	12.2	NA	NA	14.9	38.5	70.8
	MW-9B	NA	NA	NA	NA	13.6	5.69
TCE Source Wells	AMW-12A	NA	NA	NA	8.4 U	NA	0.9 (0.4[a])

NOTES:

(a) Dissolved chromium result.

Results are for total chromium unless otherwise indicated.

Results are in micrograms per liter (µg/L).

Results in **blue bold** exceed the established cleanup or guidance level for the compound.

The concentrations listed in the table are the maximum of the primary and duplicate samples (as applicable).

J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection lim.

NA = The sample was not analyzed for the specified compound.

Cr = Chromium.

TCE = Trichloroethene.

U = Analyte not detected above the specified reporting limit.

TABLE 6: SUMMARY OF RECENT TRICHLOROETHENE CONCENTRATIONS

Well Group	Well	Fall 2019	January 2020	Spring 2020	Fall 2020	February 2021	Spring 2021
Church of God	AMW-27	NA	NA	NA	NA	3.5	NA
	CPU-12	NA	NA	NA	NA	3	NA
	MW-21D	**9.1**	NA	**7.1**	0.31 J	NA	1.5
	MW-22D	NA	NA	NA	1.6	3.1	4
Intermediate Plume Wells	AMW-59	**45**	**14**	NA	4.1	**16**	**6**
	CPU-14	NA	NA	NA	3.7	NA	2.9
	MW-14C	**5.9**	3.9	NA	2.4	2.9	2.8
	MW-14E	**39**	**9.6**	NA	**9.2**	**10**	**8.4**
	MW-15E	NA	NA	NA	NA	1.5	NA
	MW-18D	2.9	4.8	NA	3.1	3.4	3.5
	MW-18E	0.7	3.5	0.25 J	0.24 J	0.22 J	0.47 J
	MW-19D	**15**	4.3	NA	**45**	**7.7**	**9.2**
	MW-20D	**18**	NA	**17**	**12**	**6.9**	**11**
	MW-40	NA	NA	NA	NA	0.89	NA
	PZ-39	NA	NA	NA	**42**	**36**	**39**
Northern Plume	AMW-16	**36**	NA	**28**	**23**	NA	**22**
	AMW-17	**48**	NA	**57**	**55**	NA	**46**
	AMW-18	**18**	NA	**16**	**16**	NA	**17**
	AMW-64	**9.9**	NA	**7.5**	**7.1**	NA	**8.4**
	MW-23D	**120**	NA	**110**	**83**	NA	**72**
	MW-38	NA	NA	NA	**12**	**14**	**22**
Proximal Source Wells	MW-2A	NA	NA	NA	NA	0.94	NA
	MW-2B	NA	NA	NA	2.5	1.4	NA
	MW-2C	NA	NA	NA	NA	0.38 J	NA
	MW-10B	**6.8**	NA	**7.4**	**8.9**	NA	2.3
	MW-13C	NA	NA	NA	NA	4.5	NA
TCE Source Wells	AMW-1A	NA	NA	**9.2**	NA	4.8	**6.2**
	AMW-2A	**12 J**	NA	**37**	NA	**6.3**	**54**
	AMW-4A	NA	NA	NA	0.50 U	0.50 U	NA
	AMW-12A	**21**	NA	**20**	**12**	**11**	**12**
	AMW-53A	**15**	NA	**11**	**19**	**28**	**9.3**
	MW-1A	**15**	NA	4.8	NA	0.41 J	0.24 J
	MW-1B	NA	NA	NA	NA	0.50 U	NA
Troutdale Wells	BENNETT	NA	NA	NA	1.3	1	NA
	MW-33	NA	NA	NA	3.5	3	0.92

NOTES:
Results are in micrograms per liter (µg/L).
Results in **blue bold** exceed the established cleanup or guidance level for the compound.
The concentrations listed in the table are the maximum of the primary and duplicate samples (as applicable).
J = The result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
NA = The sample was not analyzed for the specified compound.
TCE = Trichloroethene.
U = Analyte not detected above the specified reporting limit.

Appendix A
Chain-of-Custody Documentation and Analytical Results Summary for Groundwater Samples

Winter 2021
Laboratory Analytical Results

ALS Environmental

CHAIN OF CUSTODY
114512

001

SR#_____

COC Set_____of_____

COC#_____

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Sampler Signature	
Sampler Printed Name	Phil Ehrman

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	48H: 300.0 / NO3	14D: 8260C / VOC FP	14D: RSK 175 / Gases	28D: 300.0 / Chloride	28D: 300.0 / SO4	28D: 9060 / TOC D	28D: 9060 / TOC T	28D: SM 5220 C / COD T	180D: 200.7 Metals T (200.8)	999D: None / Misc Out 1	1: SM4500 (9056A)	2	3	4	5	Remarks
1. 2105-001		2/1/21	1007	GW	3		X														
2. 2105-002		2/1/21	1033		3		X														
3. 2105-003		2/1/21	1037		3		X														
4. 2105-004		2/1/21	1059		3		X														
5. 2105-005		2/1/21	1106		3		X														
6. 2105-006		2/1/21	1249		4		X									X					
7. 2105-007		2/1/21	1439		3		X														
8. 2105-008		2/1/21	1542		3		X														
9. 2105-009		2/1/21	1636		3		X														
10. 2105-010		2/2/21	0955	↓	3		X														

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- X IV. Data Validation Report
- X V. EDD

Invoice Information

P.O.# 17578

Bill To:_____

Turnaround Requirements

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

Send results to bruding@eaest.com.

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature Naomi Redelsa	Signature	Signature	Signature	Signature
Printed Name Phil Ehrman	Printed Name AS	Printed Name	Printed Name	Printed Name	Printed Name
Firm EA	Firm 2/4/21 1145	Firm	Firm	Firm	Firm
Date/Time 2/4/21 0930	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY 114512

001

SR#______ COC Set____of____ COC#______

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

K2101096

Project Name: Boomsnub	Project Number: 1611303
Project Manager: Jonathan Reeve	
Company: EA Engineering	
Address: 2200 6th Ave. Suite 707 Seattle WA 98121	
Phone #: 206-452-5350	email: pacificchem@eaest.com
Sampler Signature: [signature]	Sampler Printed Name: Phil Ehrman

CLIENT SAMPLE ID	LABID	Sampling Date	Sampling Time	Matrix	NUMBER OF CONTAINERS	48H 300.0 / NO3	14D 8260C / VOC FP	14D RSK 175 / Gases	28D 300.0 / Chloride	28D 300.0 / SO4	28D 9060 / TOC D	28D 9060 / TOC T	28D SM 5220 C / COD T	180D ~~200.7~~ / Metals T 6010C	999D None / Misc Out 1	1 ~~SAA 2240~~ 6020A	2 SOP Organic Acids	3	4	5	Remarks
1. 2105-011		2/2/21	1200	GW	13	X	X	X	X	X	X	X	X	X		X	X				
2. 2105-012		2/2/21	1018	GW	3		X														
3. 2105-014		2/1/21	0815	W	2		X														Trip Blank
4. 2105-015		2/2/21	1330	GW	13	X	X	X	X	X	X	X	X	X		X	X				
5. 2105-017		2/2/21	1425	GW	13	X	X	X	X	X	X	X	X	X		X	X				
6. 2105-018		2/2/21	1134	GW	1											X					
7. 2105-019		2/2/21	1540	GW	1											X					
8. 2105-020		2/2/21	1318	GW	1											X					
9.																					
10.																					

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- X IV. Data Validation Report
- X V. EDD

Invoice Information

P.O.# 17578

Bill To: ______

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments: send results to bnading@eaest.com.

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	[signature]	Naomi Redeiser				
Printed Name	Phil Ehrman	ALS				
Firm	EA	2/4/21 1145				
Date/Time	2/4/21 0930					

ALS Environmental

CHAIN OF CUSTODY
114512

001

SR#_____

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

R2101046

Project Name	Boomsnub
Project Number	1611303
Project Manager	Jonathan Reeve
Company	EA Engineering
Address	2200 6th Ave Suite 707 Seattle WA 98121
Phone #	206-452-5350
email	
Sampler Signature	
Sampler Printed Name	Phil Ehrman

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	48H: 300.0 / NO3	14D: 8260C / VOC FP	14D: RSK 175 / Gases	28D: 300.0 / Chloride	28D: 300.0 / SO4	28D: 9060 / TOC D	28D: 9060 / TOC T	28D: SM 5220 C / COD T	180D: 6010C Metals T	999D: None / Misc Out 1	1 (@)20 A	2	3	4	5	Remarks
1. 2105-016		2/2/21	1400	W	2		X		1							X					Trip Blank
2. 2105-021		2/3/21	1050	GW	8		X	X						X		X					
3. 2105-022		2/2/21	1419	GW	1											X					
4. 2105-023		2/3/21	1155		4		X									X					
5. 2105-024		2/2/21	1523		4		X									X					
6. 2105-028		2/3/21	1158		4		X									X					
7. 2105-026		2/3/21	1010		12	X	X	X	X	X	X	X	X	X							
8. 2105-027		2/3/21	1430		39	X	X	X	X	X	X	X	X	X		X					MS/MSD
9. 2105-028		2/3/21	1137		13	X	X	X	X	X	X	X	X	X		X					
10. 2105-029		2/3/21	1256	✓	3		X														

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

X IV. Data Validation Report

X V. EDD

Invoice Information

P.O.# 17578

Bill To:_____

Turnaround Requirements

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Send results to bruding@eaest.com

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature Naomi Rederick	Signature	Signature	Signature	Signature
Printed Name Phil Ehrman	Printed Name AGL	Printed Name	Printed Name	Printed Name	Printed Name
Firm EA	Firm 2/4/21 1145	Firm	Firm	Firm	Firm
Date/Time 2/4/21 0930	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY
114512

001

SR#_____

COC Set____of____

COC#_____

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

K2101096

Project Name	Boomsub
Project Number	1611303
Project Manager	Jonathan Reeve
Company	EA Engineering
Address	2200 6th Ave Suite 707 Seattle WA 98121
Phone #	206-452-5350
email	pacificchem@eaest.com
Sampler Signature	
Sampler Printed Name	Phil Ehrman

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	48H: 300.0 / NO3	14D: 8260C / VOC FP	14D: RSK 175 / Gases	28D: 300.0 / Chloride	28D: 300.0 / SO4	28D: 9060 / TOC D	28D: 9060 / TOC T	28D: SM 5220 C / COD T	180D: 200.7 Metals T (as 10C)	999D: None / Misc Out 1	1 (6020A)	2	3	4	5	Remarks
1. 2105-030		2/3/21	1405	GW	4		X									X					
2. 2105-031		2/3/21	1504	GW	4		X									X					
3. 2105-032		2/3/21	1515	GW	4		X									X					
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- X IV. Data Validation Report
- X V. EDD

Invoice Information

P.O.# 17578

Bill To:_____

Turnaround Requirements

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

Send results to bruding@eaest.com

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: Phil Ehrman	Printed Name: AS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: EA	Firm	Firm	Firm	Firm	Firm
Date/Time: 2/4/21 0930	Date/Time: 2/4/21 1145	Date/Time	Date/Time	Date/Time	Date/Time

ALS Environmental

CHAIN OF CUSTODY
114512

001

SR# K2101123

COC Set____of____

COC#__________

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Boomsnub	Project Number: 1611303
Project Manager: Jonathan Reeve	
Company: EA Engineering	
Address: 2200 6th Ave Suite 707 Seattle WA 98121	
Phone #	email: pacificchem@eaest.com
Sampler Signature: [signature]	Sampler Printed Name: Phil Ehrman

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	48H 300.0 / NO3	14D 8260C / VOC FP	14D RSK 175 / Gases	28D 300.0 / Chloride	28D 300.0 / SO4	28D 9060 / TOC D	28D 9060 / TOC T	28D SM 5220 C / COD T	180D 6010C Metals T	999D None / Misc Out 1	1 6020A	2	3	4	5	Remarks
1. 2105-033		2/4/21	1108	GW	13	X	X	X	X	X	X	X	X	X		X					
2. 2105-034			0948	GW	1											X					
3. 2105-035			1216	GW	13	X	X	X	X	X	X	X	X	X		X					
4. 2105-036			1035	GW	1											X					
5. 2105-037			1348	GW	12	X	X	X	X	X	X	X	X	X							
6. 2105-038			1140	GW	1											X					
7. 2105-039			1255	GW	4		X									X					
8. 2105-040			1308	GW	3		X														
9. 2105-041			1458	GW	4		X									X					
10. 2105-042		↓	0900	W	2		X														Trip Blank

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. CLP Like Summary (no raw data)

X IV. Data Validation Report

X V. EDD

Invoice Information

P.O.#__________

Bill To:__________

Turnaround Requirements

____ 24 hr. ____ 48 hr.

____ 5 Day

X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments: Send results to bruding@eaest.com

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: [signature]	Signature: Nilomi Pedersen	Signature	Signature	Signature	Signature
Printed Name: Phil Ehrman	Printed Name: ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm: EA	Firm: 2/5/21 0930	Firm	Firm	Firm	Firm
Date/Time: 2/5/21 0930	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-037

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	3.98		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.26		mg/l	14797-55-8
E300.0	SULFATE	2.97		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	10		ug/l	74-82-8
RSK 175	PROPANE	1.0	U	ug/l	74-98-6
RSK 175	PROPYLENE (PROPENE)	1.0	U	ug/l	115-07-1
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	9970		ug/l	7440-70-2
SW6010C	IRON	740		ug/l	7439-89-6
SW6010C	MAGNESIUM	2240		ug/l	7439-95-4
SW6010C	MANGANESE	32.7		ug/l	7439-96-5

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-037

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.63		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	3.3		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.090	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.43	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	11		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	1.09		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	1.10		mg/l	TOC

Groundwater Analysis

Sample Name AMW-1A Sampling Method PDB

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-010

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.98		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.43	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	7.7		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	12		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.82		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	4.8		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-27 Sampling Method PDB

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-012

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.10	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.29	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.1		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-2A Sampling Method PDB

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-002

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.13	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.25	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.78		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-2A-DUP Sampling Method PDB

Sample Date 2/1/2021

Sample Type FD

Sample ID 2105-003

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.23	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.86		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	5.7		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-4A Sampling Method PDB

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-001

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-53A Sampling Method PDB

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-009

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	4.0		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.26	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	28		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.39	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.96		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	28		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-011

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	16.5		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.10	U	mg/l	14797-55-8
E300.0	SULFATE	4.75		mg/l	14808-79-8
HPLC-OA	Acetic Acid	4.6		mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	1.8		ug/l	74-84-0
RSK 175	ETHYLENE	2.0		ug/l	74-85-1
RSK 175	METHANE	5700		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	20		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	86600		ug/l	7440-70-2
SW6010C	IRON (DISSOLVED)	20400		ug/l	7439-89-6
SW6010C	IRON (TOTAL)	22800		ug/l	7439-89-6
SW6010C	MAGNESIUM	30800		ug/l	7439-95-4
SW6010C	MANGANESE	1710		ug/l	7439-96-5
SW6020A	CHROMIUM	11.6		ug/l	7440-47-3

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-011

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	2.4		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	18		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.70		ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	16		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	5.7		ug/l	75-01-4
SW9060	Dissolved Organic Carbon	4.89		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	5.43		mg/l	TOC

Groundwater Analysis

Sample Name BENNETT Sampling Method SPIGOT

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-029

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.19	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	0.38	J	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name CPU-12 Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-041

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	8.59		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-13C Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-024

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	39.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.090	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.32	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.91		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	4.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-14C Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-015

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	8.02		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	4.08		mg/l	14797-55-8
E300.0	SULFATE	30.7		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.88		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	670		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	22800		ug/l	7440-70-2
SW6010C	IRON (TOTAL)	262		ug/l	7439-89-6
SW6010C	IRON (DISSOLVED)	22	J	ug/l	7439-89-6
SW6010C	MAGNESIUM	10300		ug/l	7439-95-4
SW6010C	MANGANESE	372		ug/l	7439-96-5
SW6020A	CHROMIUM	74.6		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-14C Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-015

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.11	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.31	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.15	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.71		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.9		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	1.07		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	1.07		mg/l	TOC

Groundwater Analysis

Sample Name MW-14E Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-017

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	5.71		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	2.56		mg/l	14797-55-8
E300.0	SULFATE	31.7		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	0.75		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	27500		ug/l	7440-70-2
SW6010C	IRON (DISSOLVED)	22	J	ug/l	7439-89-6
SW6010C	IRON (TOTAL)	553		ug/l	7439-89-6
SW6010C	MAGNESIUM	10400		ug/l	7439-95-4
SW6010C	MANGANESE	2500		ug/l	7439-96-5
SW6020A	CHROMIUM	166		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-14E

Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-017

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.18	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.16	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.24	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	2.4		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	10		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.93		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.59		mg/l	TOC

Groundwater Analysis

Sample Name MW-15E Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-030

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	10.3		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.26	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-18D Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-033

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	5.10		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.19		mg/l	14797-55-8
E300.0	SULFATE	11.8		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	6.7		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	18000		ug/l	74-82-8
RSK 175	PROPANE	1.7		ug/l	74-98-6
RSK 175	PROPYLENE (PROPENE)	1.9		ug/l	115-07-1
SM5220C	Chemical Oxygen Demand	13		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	19600		ug/l	7440-70-2
SW6010C	CHROMIUM	25.7		ug/l	7440-47-3
SW6010C	IRON (DISSOLVED)	1390		ug/l	7439-89-6
SW6010C	IRON (TOTAL)	2710		ug/l	7439-89-6

Groundwater Analysis

Sample Name MW-18D

Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-033

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6010C	MAGNESIUM	9880		ug/l	7439-95-4
SW6010C	MANGANESE	553		ug/l	7439-96-5
SW6020A	CHROMIUM	127		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	3.8		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.61		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-18D Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-033

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW9060	Dissolved Organic Carbon	1.26		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.87		mg/l	TOC

Groundwater Analysis

Sample Name MW-18E Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-035

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	9.42		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.10	U	mg/l	14797-55-8
E300.0	SULFATE	1.86		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	5.3		ug/l	74-84-0
RSK 175	ETHYLENE	4.3		ug/l	74-85-1
RSK 175	METHANE	17000		ug/l	74-82-8
RSK 175	PROPANE	0.57		ug/l	74-98-6
RSK 175	PROPYLENE (PROPENE)	1.3		ug/l	115-07-1
SM5220C	Chemical Oxygen Demand	38		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	78800		ug/l	7440-70-2
SW6010C	CHROMIUM	8.4	U	ug/l	7440-47-3
SW6010C	IRON (DISSOLVED)	8270		ug/l	7439-89-6
SW6010C	IRON (TOTAL)	10800		ug/l	7439-89-6

Groundwater Analysis

Sample Name MW-18E Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-035

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6010C	MAGNESIUM	21700		ug/l	7439-95-4
SW6010C	MANGANESE	1080		ug/l	7439-96-5
SW6020A	CHROMIUM	4.18		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.74		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.47	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.22	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	1.5		ug/l	75-01-4

Groundwater Analysis

Sample Name MW-18E Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-035

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW9060	Dissolved Organic Carbon	1.54		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	2.18		mg/l	TOC

Groundwater Analysis

Sample Name MW-19D Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-027

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	5.57		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.40		mg/l	14797-55-8
E300.0	SULFATE	12.2		mg/l	14808-79-8
HPLC-OA	Acetic Acid	20		mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	2.2		mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	3.1		ug/l	74-84-0
RSK 175	ETHYLENE	0.35		ug/l	74-85-1
RSK 175	METHANE	1500		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	23		mg/l	COD
SW6010C	ARSENIC	11	J	ug/l	7440-38-2
SW6010C	CALCIUM METAL	38700		ug/l	7440-70-2
SW6010C	IRON (TOTAL)	1630		ug/l	7439-89-6
SW6010C	IRON (DISSOLVED)	59		ug/l	7439-89-6
SW6010C	MAGNESIUM	19600		ug/l	7439-95-4
SW6010C	MANGANESE	1900		ug/l	7439-96-5
SW6020A	CHROMIUM	122		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-19D

Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-027

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.25	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	1.7		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.0		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.21	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	7.7		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	7.62		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	9.40		mg/l	TOC

Groundwater Analysis

Sample Name MW-1A Sampling Method PDB

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-004

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	0.62	J	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.41	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-1B Sampling Method PDB

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-005

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-20D Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-028

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.40		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.42		mg/l	14797-55-8
E300.0	SULFATE	16.5		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	2.8		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	39800		ug/l	7440-70-2
SW6010C	IRON (DISSOLVED)	26	J	ug/l	7439-89-6
SW6010C	IRON (TOTAL)	953		ug/l	7439-89-6
SW6010C	MAGNESIUM	15300		ug/l	7439-95-4
SW6010C	MANGANESE	214		ug/l	7439-96-5
SW6020A	CHROMIUM	79.2		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-20D Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-028

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.20	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.60		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.9		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	1.37		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.96		mg/l	TOC

Groundwater Analysis

Sample Name MW-22D

Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-031

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	62.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.10	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.7		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.1		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2A Sampling Method BAILER

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-008

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.14	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.52		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.94		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2B Sampling Method PDB

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-006

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	5.90		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.35	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-2C Sampling Method LOW-FLOW

Sample Date 2/1/2021

Sample Type N

Sample ID 2105-007

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.38	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-33 Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-040

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.28	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.70		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-38 Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	5.56		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.90		mg/l	14797-55-8
E300.0	SULFATE	31.7		mg/l	14808-79-8
HPLC-OA	Acetic Acid	1.0	U	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	1.3	U	ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	22600		ug/l	7440-70-2
SW6010C	IRON	112		ug/l	7439-89-6
SW6010C	MAGNESIUM	13300		ug/l	7439-95-4
SW6010C	MANGANESE	3.1		ug/l	7439-96-5
SW8260C	1,1,1-TRICHLOROETHANE	0.090	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5

Groundwater Analysis

Sample Name MW-38 Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1-DICHLOROETHYLENE	0.11	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.19	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.51		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	14		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	1.78		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	1.81		mg/l	TOC

Groundwater Analysis

Sample Name MW-3A Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-019

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	131		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-40 Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-023

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	124		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.24	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.89		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-40-DUP Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type FD

Sample ID 2105-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	123		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.21	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.77		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-4A Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-034

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	263		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4B Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-036

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	87.1		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4C Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type N

Sample ID 2105-038

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	65.0		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6A Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-018

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	15.9		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6B Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-020

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	38.5		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-9B Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type N

Sample ID 2105-022

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	13.6		ug/l	7440-47-3

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-021

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	0.29		ug/l	74-85-1
RSK 175	METHANE	1.2		ug/l	74-82-8
SW6010C	ARSENIC	5	J	ug/l	7440-38-2
SW6010C	CALCIUM METAL	78200		ug/l	7440-70-2
SW6010C	IRON (TOTAL)	1120		ug/l	7439-89-6
SW6010C	IRON (DISSOLVED)	172		ug/l	7439-89-6
SW6010C	MAGNESIUM	19400		ug/l	7439-95-4
SW6010C	MANGANESE	84.1		ug/l	7439-96-5
SW6020A	CHROMIUM	15.0		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.65		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	1.8		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	1.5		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type N

Sample ID 2105-021

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	CIS-1,2-DICHLOROETHENE	0.51		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.62		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	36		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name RINSATE-01 Sampling Method LOW-FLOW

Sample Date 2/3/2021

Sample Type FB

Sample ID 2105-032

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	6.68		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name RINSATE-02 Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type FB

Sample ID 2105-039

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	1.77		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TB-01 Sampling Method LOW-FLOW

Sample Date 2/1/2021

Sample Type TB

Sample ID 2105-014

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TB-02 Sampling Method LOW-FLOW

Sample Date 2/2/2021

Sample Type TB

Sample ID 2105-016

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	0.20	J	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.10	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name TB-03 Sampling Method LOW-FLOW

Sample Date 2/4/2021

Sample Type TB

Sample ID 2105-042

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Spring 2021
Laboratory Analytical Results

CHAIN OF CUSTODY

V210487

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler #___ of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature:

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2116-018	4/20/2021	1311	HH	GW	12	9	3							✓	✓												
	2116-022	4/20/2021	1608	RR	GW	1		1								✓												
	2116-021	4/20/2021	1606	RR	GW	1		1								✓												
	2116-019	4/20/2021	1420	RR	GW	13	8	2		1				2 HNO3	✓	✓	✓	✓	✓	✓	✓	✓			✓		1 bottle w/ H_3PO_4
	2116-016	4/20/2021	1159	HH	GW	13	8	2		1				1	✓	✓	✓	✓	✓	✓	✓	✓			✓		1 bottle w/ H_3PO_4
	2116-015	4/20/2021	1018	RR	GW	3	3								✓												
	2116-017	4/20/2021	1230	RR	GW	13	8	2		1				1	✓	✓	✓	✓	✓	✓	✓	✓			✓		1 bottle w/ H_3PO_4
	2116-023	4/20/21	1600	RR	GW	2	2								✓												

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Richard Reeve	4/21/21 9:15	1 K Moma ACS 4/21/21 1030	2		2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	On Ice Y / N; Labels Match Coc? Y / N	Trip Blank Y / N	Cooler Temp. ____°c

K2104234

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # 1/2 | Cooler #___ of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2116-020	4/20/2021	1455	RR	GW	4	3	1							✓	✓											
	2116-014	4/19/2021	1517	HH	GW	3	3								✓												
	2116-012	4/19/2021	1410	RR	GW	3	3								✓												
	2116-011	4/19/2021	1345	RR	GW	3	3								✓												
	2116-009	4/19/2021	1243	HH	GW	3	3								✓												
	2116-013	4/19/2021	1356	HH	GW	3	3								✓												
	2116-003	4/19/2021	1010	HH	GW	3	3								✓												
	2116-001	4/19/2021	0923	HH	GW	3	3								✓												
	2116-017B	4/20/2021	1245	RR	GW	3	3								✓												
	2116-002	4/19/2021	0955	HH	GW	3	3								✓												
	2116-004	4/19/2021	1113	HH	GW	3	3								✓												

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Richard Reed	4/21/21	1 PCS 4/21/21 1030	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ oC

KZ1C4234

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # 2/2 | Cooler #___ of ___

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2116-005	4/19/2021	1140	HH	GW	3	3								✓												
	2116-007	4/19/2021	1209	HH	GW	3	3								✓												
	2116-006	4/19/2021	1158	HH	GW	3	3								✓												
	2116-010	4/19/2021	1300	HH	GW	3	3								✓												
	2116-008	4/19/2021	1228	HH	GW	3	3								✓												
	2116-024	4/19/2021	0923	HH	W	2	2								✓												TRIPBLANK

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Richard Reed

Sample Custody must be documented below each time samples change possession.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Richard Reed	4/21/21	1 DM HCS 4/21/21 1030	2		2
3 3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5 5	Relinquished by:	Date Time:	Received By: 5	On Ice Y / N Trip Blank Y / N Labels Match Coc? Y / N		Cooler Temp. ____ °C

K2104380

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC #	Cooler # 1 of 2
Lab Quote #	Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611302

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 22030

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2116-030	4/21/2021	1214	RR	GW	3	24		63					3	✓	✓	✓	✓	✓	✓	✓	✓			✓		x3 w/ H_3PO_4, MS/MSD
	2116-032	4/21/2021	1436	RR	GW	13	8		2	1				1	✓	✓	✓	✓	✓	✓	✓	✓			✓		x1 w/ H_3PO_4
	2116-037	4/21/2021	1214	RR	W	2	2								✓							✓					

FIH 4/21/2021

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
Northern Plume

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Robert Reed	4/22/21	1 RMONROACS	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ °C

4/23/21 1130

K2104380

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 2 of 2

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature:

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611302

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 22030

Analytical Information

Matrix Codes

W - Water
GW - Ground Water
SW - Surface Water
SO - Soil
OI - Oil
WP - Wipe
LIQ - Non-aqueous Liquid
AIR
DW - Drinking Water (Perchlorate Only)

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2116-029	4/21/21	1153	HH	GW	4	3		1						X	X										X	X	
	2116-025	4/21/21	1039	HH	GW	8	8								X			X				X					
	2116-025	4/21/21	1039	HH	GW	5			2	1				1		X	X	X	X	X	X	X			X	X	Pres. H_3PO_4
	2116-028	4/21/21	1047	RR	GW	4	3		1						X	X											
	2116-026	4/21/21	1042	RR	GW	13	8		2	1				1	X	X	X	X	X	X	X	X			X	X	Pres. H_3PO_4
	2116-027	4/21/21	1049	HH	GW	4	3		1						X	X											
	2116-031	4/21/21	1339	HH	GW	1										X											
	2116-033	4/21/21	1437	HH	GW	1										X											
	2116-034	4/21/21	1526	RR	GW	1										X											
	2116-035	4/21/21	1524	HH	GW	1										X											
	2116-036	4/21/21	1608	RR	GW	1										X											

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
Northern Plume

Sample Custody must be documented below each time samples change possession.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Richd Read	4/22/21	1 ALS 4/23/21 1130	2		2
3			3	4		4
5			5			

On Ice Y / N Trip Blank Y / N Cooler Temp. ____ °C

Labels Match Coc? Y / N

K2104380

CHAIN OF CUSTODY

Laboratory Information

Address: 1317 South 13th Ave., Kelso, WA 98626

Phone #: 360-577-7222 POC: Mark Harris

COC # | Cooler # 2 of 2

Lab Quote # | Lab Job #:

Client / Reporting Information

C

Company Name: EA Engineering, Science, and Technology, Inc., PBC

Address: 2200 6th Ave., Suite 707

City: Seattle State: WA Zip: 98121

Project Contact: Jonathan Reeve and per contract

Phone #: 206-452-5358

Samplers's Name/Signature:

Project Information

Project Name: Boomsnub

Street: 7608 NE 47th Ave

City: Vancouver State: WA

Project #: 1611303

Email: jreeve@eaest.com, skettlewell@eaest.com, asmith@eaest.com, and esullivan@eaest.com

Purchase Order #: 17578

Analytical Information

Lab Sample ID	Sample ID	Collection: Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	ENCORE	NaHSO4	MEOH	NONE	EPA 8260C/ VOCs	EPA 6020A/ TOTAL CHROMIUM	EPA 6010C/ METALS (As, Ca, Mg, Mn), DISSOLVED IRON	EPA 300.0/ ANIONS	SM 5310C/ TOC, DOC	SM5220C/ COD	ORGANIC ACIDS/ VOLATILE FATTY ACIDS	RSK 175/ DISSOLVED GASES			Dissolved Chromium (field filtered)	Dissolved metals (As, Ca, Mg, Mn) (field filtered)	Notes
	2116-038	4/21/21	1039	NR	GW	2	2								X							X					Trip blank

Matrix Codes: W - Water; GW - Ground Water; SW - Surface Water; SO - Soil; OI - Oil; WP - Wipe; LIQ - Non-aqueous Liquid; AIR; DW - Drinking Water (Perchlorate Only)

Turnaround Time (Business days): standard

Data Deliverable Information: Per contract

Comments / Remarks: Samples from Site Boomsnub O&M / Project 1611303/ Phase 0004
Metals: As, Ca, Mg, Mn
O&M

Sample Custody must be documented below each time samples change possession.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Richard Reed	4/22/21	1 4/23/21 1130	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3 3		3	4		4
Relinquished by:	Date Time:	Received By:	On Ice Y / N	Trip Blank Y / N	Cooler Temp.
5 5		5	Labels Match Coc? Y / N		____ oC

Groundwater Analysis

Sample Name AMW-12A

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-032

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	6.33		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.79	*	mg/l	14797-55-8
E300.0	SULFATE	5.00		mg/l	14808-79-8
HPLC-OA	Acetic Acid	0.77	J	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	1.3	U	ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	14700		ug/l	7440-70-2
SW6010C	MAGNESIUM	3570		ug/l	7439-95-4
SW6010C	MANGANESE	8.8		ug/l	7439-96-5
SW6020A	CHROMIUM (TOTAL)	0.90		ug/l	7440-47-3
SW6020A	CHROMIUM (DISSOLVED)	0.40		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.46	J	ug/l	71-55-6

Groundwater Analysis

Sample Name AMW-12A

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-032

Sampling Method LOW-FLOW

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	2.7		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.18	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.47	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	12		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.60		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	1.00		mg/l	TOC

Groundwater Analysis

Sample Name AMW-16 Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-006

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.21	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.20	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.10	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.11	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	22		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-17 Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-010

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.090	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.22	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	46		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-18 Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-008

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	17		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-1A Sampling Method PDB

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-015

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.67		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	8.8		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.20	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-2A Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-011

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	1.4		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	5.5		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.47	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.0		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	54		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-53A

Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-012

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.81		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	6.7		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.14	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.43	J	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	9.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-017

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	16.3		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	0.05	J	mg/l	14797-55-8
E300.0	SULFATE	2.32		mg/l	14808-79-8
HPLC-OA	Acetic Acid	10		mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	2.4		ug/l	74-84-0
RSK 175	ETHYLENE	3.4		ug/l	74-85-1
RSK 175	METHANE	5200		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	34		mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	91000		ug/l	7440-70-2
SW6010C	MAGNESIUM	32400		ug/l	7439-95-4
SW6010C	MANGANESE	1820		ug/l	7439-96-5
SW6020A	CHROMIUM (TOTAL)	12.2		ug/l	7440-47-3
SW6020A	CHROMIUM (DISSOLVED)	6.29		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6

Groundwater Analysis

Sample Name AMW-59 Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-017

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.91		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	9.8		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.52		ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	4.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	5.7		ug/l	75-01-4
SW9060	Dissolved Organic Carbon	6.30		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	7.90		mg/l	TOC

Groundwater Analysis

Sample Name AMW-59DUP Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type FD

Sample ID 2116-017B

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.98		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	11		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.44	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	6.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	5.5		ug/l	75-01-4

Groundwater Analysis

Sample Name AMW-64 Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-009

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.070	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	8.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name CPU-14 Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-013

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.9		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-10B Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-002

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.13	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.51		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.3		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-14C

Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-016

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	7.52		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	3.70		mg/l	14797-55-8
E300.0	SULFATE	24.8		mg/l	14808-79-8
HPLC-OA	Acetic Acid	0.60	J	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.22		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	140		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	4	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	21700		ug/l	7440-70-2
SW6010C	MAGNESIUM	9590		ug/l	7439-95-4
SW6010C	MANGANESE	138		ug/l	7439-96-5
SW6020A	CHROMIUM (TOTAL)	84.1		ug/l	7440-47-3
SW6020A	CHROMIUM (DISSOLVED)	76.7		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.090	J	ug/l	71-55-6

Groundwater Analysis

Sample Name MW-14C

Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-016

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.11	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.080	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.58		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	2.8		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.36	J	mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.50		mg/l	TOC

Groundwater Analysis

Sample Name MW-14E Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-018

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	234		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.080	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.20	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	2.9		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	8.4		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-18D

Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-019

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.81		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.26		mg/l	14797-55-8
E300.0	SULFATE	13.5		mg/l	14808-79-8
HPLC-OA	Acetic Acid	0.68	J	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	5.3		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	17000		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	7	J	mg/l	COD
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL	20200		ug/l	7440-70-2
SW6010C	MAGNESIUM	9940		ug/l	7439-95-4
SW6010C	MANGANESE	483		ug/l	7439-96-5
SW6020A	CHROMIUM (TOTAL)	158		ug/l	7440-47-3
SW6020A	CHROMIUM (DISSOLVED)	30.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6

Groundwater Analysis

Sample Name MW-18D

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-019

Sampling Method LOW-FLOW

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.12	J	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	4.0		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.57		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	3.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	0.45	J	mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.80		mg/l	TOC

Groundwater Analysis

Sample Name MW-18E Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-003

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.69		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	1.4		ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.47	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.91		ug/l	75-01-4

Groundwater Analysis

Sample Name MW-19D

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-030

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	5.74		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.60	*	mg/l	14797-55-8
E300.0	SULFATE	11.5		mg/l	14808-79-8
HPLC-OA	Acetic Acid	45		mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	3.2		ug/l	74-84-0
RSK 175	ETHYLENE	1.3		ug/l	74-85-1
RSK 175	METHANE	1700		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	49		mg/l	COD
SW6010C	ARSENIC	10	J	ug/l	7440-38-2
SW6010C	CALCIUM METAL	59900		ug/l	7440-70-2
SW6010C	MAGNESIUM	29500		ug/l	7439-95-4
SW6010C	MANGANESE	2080		ug/l	7439-96-5
SW6020A	CHROMIUM (DISSOLVED)	33.9		ug/l	7440-47-3
SW6020A	CHROMIUM (TOTAL)	59.6		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6

Groundwater Analysis

Sample Name MW-19D

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-030

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.29	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	4.3		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.3		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.29	J	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	9.2		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4
SW9060	Dissolved Organic Carbon	20.7		mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	20.5		mg/l	TOC

Groundwater Analysis

Sample Name MW-1A Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-001

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	0.33	J	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.24	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-20D

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.35		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.05	*	mg/l	14797-55-8
E300.0	SULFATE	16.4		mg/l	14808-79-8
HPLC-OA	Acetic Acid	0.75	J	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.83		ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	180		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC	5	J	ug/l	7440-38-2
SW6010C	ARSENIC	21	U	ug/l	7440-38-2
SW6010C	CALCIUM METAL (DISSOLVED)	41500		ug/l	7440-70-2
SW6010C	CALCIUM METAL (TOTAL)	39300		ug/l	7440-70-2
SW6010C	MAGNESIUM (DISSOLVED)	16400		ug/l	7439-95-4
SW6010C	MAGNESIUM (TOTAL)	16300		ug/l	7439-95-4
SW6010C	MANGANESE (TOTAL)	346		ug/l	7439-96-5

Groundwater Analysis

Sample Name MW-20D

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6010C	MANGANESE (DISSOLVED)	146		ug/l	7439-96-5
SW6020A	CHROMIUM (TOTAL)	86.4		ug/l	7440-47-3
SW6020A	CHROMIUM (DISSOLVED)	53.4		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.10	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.88		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	8.6		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-20D

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-025

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW9060	Dissolved Organic Carbon	0.45	J	mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.90		mg/l	TOC

Groundwater Analysis

Sample Name MW-20D-DUP Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type FD

Sample ID 2116-027

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	80.8		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.10	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.13	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.10	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.1		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	11		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-21D Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-004

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	1.5		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-22D Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-029

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	68.2		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.090	J	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.13	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	1.8		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	4.0		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-23D Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-005

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.40	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.80		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.25	J	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	72		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-33 Sampling Method LOW-FLOW

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-014

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.92		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-38 Sampling Method PDB

Sample Date 4/19/2021

Sample Type N

Sample ID 2116-007

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.080	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.12	J	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.73		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	22		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name MW-3A
Sampling Method LOW-FLOW
Sample Date 4/21/2021
Sample Type N
Sample ID 2116-031

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	140		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4A

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-033

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	380		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4B
Sampling Method LOW-FLOW
Sample Date 4/21/2021
Sample Type N
Sample ID 2116-035

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	107		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-4C

Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-036

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	97.2		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6A
Sampling Method LOW-FLOW
Sample Date 4/20/2021
Sample Type N
Sample ID 2116-021

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	11.1		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-6B

Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type N

Sample ID 2116-022

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	70.8		ug/l	7440-47-3

Groundwater Analysis

Sample Name MW-9B Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-034

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	5.69		ug/l	7440-47-3

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
E300.0	CHLORIDE	4.70		mg/l	16887-00-6
E300.0	NITRATE AS NITROGEN	1.68	*	mg/l	14797-55-8
E300.0	SULFATE	18.3		mg/l	14808-79-8
HPLC-OA	Acetic Acid	0.80	J	mg/l	64-19-7
HPLC-OA	Butyric Acid	2.0	U	mg/l	107-92-6
HPLC-OA	Lactic Acid	1.0	U	mg/l	50-21-5
HPLC-OA	PROPIONIC ACID	1.0	U	mg/l	79-09-4
HPLC-OA	PYRUVIC ACID	0.50	U	mg/l	127-17-3
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	1.0		ug/l	74-82-8
SM5220C	Chemical Oxygen Demand	10	U	mg/l	COD
SW6010C	ARSENIC (TOTAL)	21	U	ug/l	7440-38-2
SW6010C	ARSENIC (DISSOLVED)	8	J	ug/l	7440-38-2
SW6010C	CALCIUM METAL (DISSOLVED)	77300		ug/l	7440-70-2
SW6010C	CALCIUM METAL (TOTAL)	79600		ug/l	7440-70-2
SW6010C	MAGNESIUM (DISSOLVED)	19200		ug/l	7439-95-4
SW6010C	MAGNESIUM (TOTAL)	19600		ug/l	7439-95-4
SW6010C	MANGANESE (TOTAL)	95.3		ug/l	7439-96-5

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6010C	MANGANESE (DISSOLVED)	89.3		ug/l	7439-96-5
SW6020A	CHROMIUM (TOTAL)	6.13		ug/l	7440-47-3
SW6020A	CHROMIUM (DISSOLVED)	4.10		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.48	J	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	1.5		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.89		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	1.2		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.80		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	39		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name PZ-39 Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type N

Sample ID 2116-026

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW9060	Dissolved Organic Carbon	0.48	J	mg/l	DOC
SW9060	TOTAL ORGANIC CARBON	0.90		mg/l	TOC

Groundwater Analysis

Sample Name PZ-39DUP
Sampling Method LOW-FLOW
Sample Date 4/21/2021
Sample Type FD
Sample ID 2116-028

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	6.49		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.51		ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	1.4		ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.91		ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	1.8		ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.75		ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	37		ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name RINSATE 1 Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type FB

Sample ID 2116-020

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW6020A	CHROMIUM	27.0		ug/l	7440-47-3
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 1 Sampling Method LOW-FLOW

Sample Date 4/20/2021

Sample Type TB

Sample ID 2116-023

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	0.20	J	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 2 Sampling Method LOW-FLOW

Sample Date 4/19/2021

Sample Type TB

Sample ID 2116-024

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.21	J	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 3 Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type TB

Sample ID 2116-037

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	1.3	U	ug/l	74-82-8
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Groundwater Analysis

Sample Name Trip Blank 4 Sampling Method LOW-FLOW

Sample Date 4/21/2021

Sample Type TB

Sample ID 2116-038

Analytic Method	Analyte	Result	Qualifiers	Unit	Cas Number
RSK 175	ETHANE	0.60	U	ug/l	74-84-0
RSK 175	ETHYLENE	1.0	U	ug/l	74-85-1
RSK 175	METHANE	1.3	U	ug/l	74-82-8
SW8260C	1,1,1-TRICHLOROETHANE	0.50	U	ug/l	71-55-6
SW8260C	1,1,2,2-TETRACHLOROETHANE	0.50	U	ug/l	79-34-5
SW8260C	1,1-DICHLOROETHYLENE	0.50	U	ug/l	75-35-4
SW8260C	1,2-DIBROMO-3-CHLOROPROPANE	2.0	U	ug/l	96-12-8
SW8260C	1,2-DICHLOROETHANE	0.50	U	ug/l	107-06-2
SW8260C	BROMODICHLOROMETHANE	0.50	U	ug/l	75-27-4
SW8260C	CARBON TETRACHLORIDE	0.50	U	ug/l	56-23-5
SW8260C	CFC-11	0.50	U	ug/l	75-69-4
SW8260C	CHLORODIBROMOMETHANE	0.50	U	ug/l	124-48-1
SW8260C	CIS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-59-2
SW8260C	DICHLOROMETHANE	2.0	U	ug/l	75-09-2
SW8260C	HEXACHLORO-1,3-BUTADIENE	2.0	U	ug/l	87-68-3
SW8260C	TETRACHLOROETHENE	0.50	U	ug/l	127-18-4
SW8260C	TRANS-1,2-DICHLOROETHENE	0.50	U	ug/l	156-60-5
SW8260C	TRICHLOROETHYLENE	0.50	U	ug/l	79-01-6
SW8260C	VINYL CHLORIDE	0.50	U	ug/l	75-01-4

Appendix B
Site Groundwater Extraction/Treatment System

Appendix B.1
System Operation Table

APPENDIX B.1 TABLE 1
OU-3 GROUNDWATER EXTRACTION SUMMARY
BOOMSNUB/AIRCO SUPERFUND SITE

Date	Total Flow gpd[1]	System Operating Hours[2]	System Operating Percentage
01/01/21	53,809	24.00	100.00%
01/02/21	53,671	24.00	100.00%
01/03/21	5,144	2.30	9.58%
01/04/21	0	0.00	0.00%
01/05/21	0	0.00	0.00%
01/06/21	0	0.00	0.00%
01/07/21	0	0.00	0.00%
01/08/21	0	0.00	0.00%
01/09/21	0	0.00	0.00%
01/10/21	0	0.00	0.00%
01/11/21	0	0.00	0.00%
01/12/21	0	0.00	0.00%
01/13/21	0	0.00	0.00%
01/14/21	0	0.00	0.00%
01/15/21	8,799	4.48	18.67%
01/16/21	0	0.00	0.00%
01/17/21	0	0.00	0.00%
01/18/21	0	0.00	0.00%
01/19/21	0	0.00	0.00%
01/20/21	0	0.00	0.00%
01/21/21	0	0.00	0.00%
01/22/21	0	0.00	0.00%
01/23/21	0	0.00	0.00%
01/24/21	0	0.00	0.00%
01/25/21	0	0.00	0.00%
01/26/21	0	0.00	0.00%
01/27/21	0	0.00	0.00%
01/28/21	0	0.00	0.00%
01/29/21	0	0.00	0.00%
01/30/21	0	0.00	0.00%
01/31/21	0	0.00	0.00%
Subtotals	**121,423**	**54.78**	**7.36%**

Scheduled Downtime/Maintenance[3]		
Total Hours/Month	744	
Total Operating Hours/Availability %	**54.78**	**7.36%**
Daily Breakdown	***January 2021***	**Permit Limits**
Average Daily Flow (gallons)	3,917	230,400
Average Discharge Flow (gpm)[1]	37	
Maximum Daily Flow (gallons)	53,809	230,400
Flow to City of Vancouver	0	
Hundreds of Cubic Feet Breakdown		
Total Flow (hundreds of cubic feet)	162	9549
Average Daily Flow (hundreds of cubic feet)	5	308

APPENDIX B.1 TABLE 1

OU-3 GROUNDWATER EXTRACTION SUMMARY

BOOMSNUB/AIRCO SUPERFUND SITE

Notes:

[1] gpd = gallons per day; gpm = gallons per minute

[2] Based on minutes of operation as reported by data logger

[3] Planned shutdown periods for routine maintenance or monitoring activities - see monthly notes for details

Appendix B.2
Mass Removal Table

APPENDIX B.2 - TABLE 1
OU-3 CHROMIUM AND TCE MASS REMOVAL ESTIMATION
BOOMSNUB/AIRCO SUPERFUND SITE

Date	Monthly Flow (Gallons)	Influent Chromium (ug/L)	Influent TCE (ug/L)	Monthly Chromium Removal (lbs)	Monthly TCE Removal (lbs)	Cumulative Chromium Removed (lbs)	Cumulative TCE Removed (lbs)
1990 to 1995[1]						13,751.0	
1995 to May 1999[1]						20,538.0	
1990 to 1999[1]							1,645.7
Ave. Jun-Dec 1999	5,303,734	634.4	160.7	27.9	7.2	20,733.6	1,696.3
Ave. for 2000	5,429,513	593.4	197.5	27.0	8.9	21,057.0	1,803.6
Ave. for 2001	5,482,077	450.6	139.2	20.7	6.4	21,305.7	1,879.9
Ave. for 2002	5,587,227	379.0	102.1	17.7	4.8	21,518.0	1,937.3
Ave. for 2003	6,279,889	281.8	74.7	14.7	3.9	21,694.7	1,984.1
Ave. for 2004	6,463,796	194.1	59.8	10.5	3.2	21,820.2	2,022.8
Ave. for 2005	6,213,535	165.5	54.8	8.6	2.8	21,923.2	2,056.8
Ave. for 2006	6,409,175	153.8	55.8	8.2	3.0	22,022.0	2,092.2
Ave. for 2007	6,366,615	108.7	40.1	5.7	2.1	22,090.9	2,117.3
Ave. for 2008	6,547,878	84.2	26.3	4.6	1.4	22,146.3	2,134.6
Ave. for 2009	6,628,721	64.6	22.3	3.6	1.2	22,189.7	2,149.4
Ave. for 2010	6,835,587	60.5	20.8	3.5	1.2	22,230.8	2,163.6
Ave. for 2011	6,585,675	54.0	17.5	3.0	1.0	22,266.5	2,175.2
Ave. for 2012	6,868,867	49.4	16.8	2.8	1.0	22,300.8	2,186.8
Ave. for 2013	5,566,626	56.1	19.1	2.6	0.9	22,332.0	2,197.4
Ave. for 2014	5,466,047	54.5	17	2.5	0.8	22,361.8	2,206.6
Ave. for 2015	5,471,175	51.3	15	2.3	0.7	22,389.9	2,214.9
Ave. for 2016	5,474,936	48.8	13.2	2.2	0.6	22,416.7	2,222.1
Ave. for 2017	5,595,195	43.5	13	2.0	0.6	22,440.7	2,229.4
Jan-18	5,686,640	43.9	11	2.1	0.5	22,442.8	2,229.9
Feb-18	5,136,129	42.7	12	1.8	0.5	22,444.6	2,230.4
Mar-18	5,654,944	43.7	13	2.1	0.6	22,446.7	2,231.1
Apr-18	5,493,023	42.4	13	1.9	0.6	22,448.7	2,231.6
May-18	5,690,489	41.9	12	2.0	0.6	22,450.6	2,232.2
Jun-18	5,392,921	41.0	13	1.8	0.6	22,452.5	2,232.8
Jul-18	5,302,102	42.1	11	1.9	0.5	22,454.4	2,233.3
Aug-18	4,932,325	39.8	11	1.6	0.5	22,456.0	2,233.7
Sep-18	4,413,403	38.0	12	1.4	0.4	22,457.4	2,234.2
Oct-18	4,533,790	37.0	10	1.4	0.4	22,458.8	2,234.6
Nov-18	4,361,354	39.5	9.6	1.4	0.3	22,460.2	2,234.9
Dec-18	4,463,485	39.9	12	1.5	0.4	22,461.7	2,235.4
Jan-19	4,413,928	41.3	11	1.5	0.4	22,463.2	2,235.8
Feb-19	3,933,978	42.3	12	1.4	0.4	22,464.6	2,236.2
Mar-19	3,934,035	46.5	8.3	1.5	0.3	22,466.2	2,236.4
Apr-19	4,388,532	41.2	11	1.5	0.4	22,467.7	2,236.8
May-19	4,498,487	43.6	10	1.6	0.4	22,469.3	2,237.2
Jun-19	4,305,498	42.7	9.6	1.5	0.3	22,470.8	2,237.6
Jul-19	4,394,334	41.3	11.0	1.5	0.4	22,472.4	2,238.0
Aug-19	4,401,675	41.4	8.6	1.5	0.3	22,473.9	2,238.3
Sep-19	4,238,615	40.5	8.9	1.4	0.3	22,475.3	2,238.6
Oct-19	3,694,136	42.7	8.4	1.3	0.3	22,476.6	2,238.9
Nov-19	2,954,631	32.2	6.3	0.8	0.2	22,477.4	2,239.0
Dec-19	3,044,436	35.6	5.6	0.9	0.1	22,478.3	2,239.1
Jan-20	3,085,887	37.4	5.4	1.0	0.1	22,479.3	2,239.3
Feb-20	2,964,380	38.3	5.9	0.9	0.1	22,480.2	2,239.4
Mar-20	3,090,940	38.3	5.4	1.0	0.1	22,481.2	2,239.6
Apr-20	2,939,574	38.6	6.3	0.9	0.2	22,482.2	2,239.7
May-20	2,598,158	37.9	6.3	0.8	0.1	22,483.0	2,239.9
Jun-20	2,370,415	31.2	3.0	0.6	0.1	22,483.6	2,239.9
Jan-21	121,423	45.7	5.3	0.0	0.0	22,483.7	2,239.9

Notes:
June 1999 through March 2002 data provided by URS
Shaded area represents the reporting period.
[1] - Provided by ICF Kaiser
lbs = pounds
ug/L = micrograms per liter

Appendix B.3
Report to the City of Vancouver and Supporting Flow Data

EA Engineering, Science, and Technology, Inc., PBC

2200 Sixth Avenue, Suite 707
Seattle, Washington 98121
Telephone: 206-452-5350
Fax: 206-443-7646
www.eaest.com

23 April 2021
1611303 LN1731

Mr. Nick Imbery
Industrial Pretreatment Coordinator
City of Vancouver
Marine Park Engineering Office
P.O. Box 1995
Vancouver, Washington 98668-1995

Subject: Semi-Annual Self-Monitoring Report – 30 April 2021
Boomsnub/Airco Superfund Site
Hazel Dell, Washington

Dear Mr. Imbery:

On behalf of Messer LLC, we are submitting the Semi-Annual Self-Monitoring Report for the Boomsnub/Airco Superfund Site, prepared in accordance with the City of Vancouver Industrial Wastewater Discharge Permit 2019-06. The time period covered includes January through March 2021. However, due to system shut down only January 2021 data is included in this Self-Monitoring Report. Flow data are being reported from the flow meter on the air stripper. During the reporting period, the discharges were made to the infiltration gallery on Messer property.

The system, with EPA approval, was planned to be shut off and disconnected on 7 January 2021. However, on 3 January 2021, the system shut off due to a heavy rain event triggering a failsafe shutdown in flooded containment vaults. The system remained off as containment vaults were pumped dry. The system was turned on again for a brief period on 15 January 2021 to verify restored functionality of all system components and collect influent/effluent samples for the City sewer discharge permit. Following this system check and sample collection, the system was turned off, drained, and winterized. The Groundwater Treatment System will remain in this "mothballed" state unless the EPA elects to reactivate the system at a later time.

Effluent samples were collected by EA Engineering, Science, and Technology, Inc., PBC on January 15, 2021. ALS Environmental, located in Kelso, Washington, is our analytical laboratory. The analytical data for the monthly sampling event is included, along with the case narrative, sample Chain-of-Custody forms, and a list of data qualifiers. The pH values reported were based on bi-monthly field pH readings. The results indicate that concentrations of trichloroethene and chromium in effluent are lower than effluent discharge limits.

Please let me know if you have any questions regarding the enclosed information.

Sincerely,

Jonathan Reeve, LHG
Project Manager

JR/lw
cc: Dave Sordi
Philipp Sieber

Enclosures: City of Vancouver Semi-Annual Self-Monitoring Report
List of Data Qualifiers
Laboratory Case Narratives, Chain of Custody forms, and Analytical Results

Industrial Wastewater Discharge Monitoring Report

CITY OF Vancouver WASHINGTON

Industrial Pretreatment
P.O. Box 1995
Vancouver, WA 98668
Office: 360-487-7130
Fax: 360- 487-7139

Industry Name: **Messer (Boomsnub Airco Superfund)** Permit Number: 2019-06
Report Due Date (check one): □ April 30 □ July 30 □ October 30 ■ **January 31**
Sample Collection Date: 15 January 2021

Parameter	Result	Daily Maximum Limit	Monthly Average	Instantaneous Maximum	Reporting Frequency	Sample Type
Flow, Daily Max Month #1 - January	0	230,400 gpd	NA	NA	Quarterly	Recording
Flow, Daily Max Month #2 - NA	NA	NA	NA	NA	Quarterly	Recording
Flow, Daily Max Month #3 – NA	NA	NA	NA	NA	Quarterly	Recording
pH, Max	7.98	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
pH, Min	7.85	5.5 to 10.0 S.U.	NA	NA	Quarterly	Grab
Max/Ave Total Chromium Month #1 - January	0.0943 mg/l	7.22 mg/l	0.572 mg/l	14.44 mg/l	Quarterly	Composite
Max/Ave Total Chromium Month #2 - NA	NA	7.22 mg/l	0.572 mg/l	14.44 mg/l	Quarterly	Composite
Max/Ave Total Chromium Month #3 - NA	NA	7.22 mg/l	0.572 mg/l	14.44 mg/l	Quarterly	Composite
Trichloroethylene Month #1 - January	0.00015 J	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #2 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Trichloroethylene Month #3 - NA	NA	0.33 mg/l	NA	NA	Quarterly	Grab
Chromium VI*	NA	4.28 mg/l	NA	8.56 mg/l	Quarterly	Composite

* Chromium VI results required if Messer discharges IX/AS treatment system wastewater to City sanitary sewer for a period of ten (10) consecutive days or more.

General Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Representative Sampling Certification Statement

"I certify under penalty of law that the sample(s) collected by Messer LLC or its agent for the purpose of compliance monitoring was collected in accordance with 40 CFR 136 and represents the character of wastewater discharged to the city treatment system."

Signature *Title* *Date*

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

January 15, 2021
Laboratory Analytical Results

Client: EA Engineering, Science, and Technology (EAEST)
Project: Boomsnub
Sample Matrix: Water

Service Request: K2100478
Date Received: 01/18/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Three water samples were received for analysis at ALS Environmental on 01/18/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 01/21/2021: The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS13\0121F006.D: Dibromochloromethane. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Approved by _____ Date 01/29/2021

ALS Environmental

CHAIN OF CUSTODY
87369

004

SR# K2100478

COC Set 1 of 1

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Boomsnub	Project Number: 1611303.001
Project Manager: Jonathan Reeve	
Company: EA Engineering	
Address: 2200 6th Ave, Suite 707 Seattle, WA 98121	
Phone #: (206) 452-5°	email: jreeve@eaest.com
Sampler Signature: Richard Read	Sampler Printed Name: Rick READ

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	0H SM 4500-H+ B / pH	14D 8260C / VOC FP	180D 200.7 / Metals T	1	2	3	4	5	Remarks
1. INF-011521		1/15/21	10:00	H_2O	4		X	X						
2. EFF-011521		↓	10:08	↓	4		X	X						
3. TB-011521		↓	10:12	↓	2		X							
4.														
5.														
6.														
7.														
8.														
9.														
10.														

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- X III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- X V. EDD

Invoice Information

P.O.#

Bill To:

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co (Cr) Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

VOCs - 8260c
Total Metals - Cr

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Richard Read	Signature: KMoore	Signature	Signature	Signature	Signature
Printed Name: Rick READ	Printed Name:	Printed Name	Printed Name	Printed Name	Printed Name
Firm: EA	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 1/18/21 9:00	Date/Time: 1/18/21 1250	Date/Time	Date/Time	Date/Time	Date/Time

PM MH

Cooler Receipt and Preservation Form

Client Jamsnub Service Request K21 0047 8

Received: 1/18/21 Opened: 1/18/21 By: [illegible] Unloaded: 1/18/21 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? FRONT
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified if out of temp	Tracking Number (NA)	Filed
N/A	5.2	IR01	87369	—	—		

6. Packing material: (*Inserts*) *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:00
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	IN-011521	**Basis:**	NA
Lab Code:	K2100478-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	200.7	**45.7**	ug/L	8.4	2.1	1	01/28/21 13:15	01/22/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:08
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	EFF-011521	**Basis:**	NA
Lab Code:	K2100478-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chromium	200.7	**94.3**	ug/L	8.4	2.1	1	01/28/21 13:18	01/22/21	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:00
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	IN-011521	**Units:**	ug/L
Lab Code:	K2100478-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	**0.20**	**J**	0.50	0.091	1	01/21/21 17:57	
Carbon Tetrachloride	ND	U	0.50	0.096	1	01/21/21 17:57	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	01/21/21 17:57	
Dibromochloromethane	ND	U	0.50	0.14	1	01/21/21 17:57	*
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	01/21/21 17:57	
1,1-Dichloroethene	ND	U	0.50	0.080	1	01/21/21 17:57	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	01/21/21 17:57	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	01/21/21 17:57	
Hexachlorobutadiene	ND	U	2.0	0.11	1	01/21/21 17:57	
Methylene Chloride	ND	U	2.0	0.10	1	01/21/21 17:57	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	01/21/21 17:57	
Tetrachloroethene (PCE)	**0.62**		0.50	0.099	1	01/21/21 17:57	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	01/21/21 17:57	
Trichloroethene (TCE)	**5.3**		0.50	0.10	1	01/21/21 17:57	
Trichlorofluoromethane (CFC 11)	**0.17**	**J**	0.50	0.12	1	01/21/21 17:57	
Vinyl Chloride	ND	U	0.50	0.075	1	01/21/21 17:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	84	68 - 117	01/21/21 17:57	
Dibromofluoromethane	95	73 - 122	01/21/21 17:57	
Toluene-d8	96	65 - 144	01/21/21 17:57	

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:08
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	EFF-011521	**Units:**	ug/L
Lab Code:	K2100478-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND	U	0.50	0.091	1	01/21/21 18:24	
Carbon Tetrachloride	ND	U	0.50	0.096	1	01/21/21 18:24	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	01/21/21 18:24	
Dibromochloromethane	ND	U	0.50	0.14	1	01/21/21 18:24	*
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	01/21/21 18:24	
1,1-Dichloroethene	ND	U	0.50	0.080	1	01/21/21 18:24	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	01/21/21 18:24	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	01/21/21 18:24	
Hexachlorobutadiene	ND	U	2.0	0.11	1	01/21/21 18:24	
Methylene Chloride	ND	U	2.0	0.10	1	01/21/21 18:24	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	01/21/21 18:24	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	01/21/21 18:24	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	01/21/21 18:24	
Trichloroethene (TCE)	**0.15**	**J**	0.50	0.10	1	01/21/21 18:24	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	01/21/21 18:24	
Vinyl Chloride	ND	U	0.50	0.075	1	01/21/21 18:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	01/21/21 18:24	
Dibromofluoromethane	96	73 - 122	01/21/21 18:24	
Toluene-d8	98	65 - 144	01/21/21 18:24	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	EA Engineering, Science, and Technology (EAEST)	**Service Request:**	K2100478
Project:	Boomsnub/1611303.001	**Date Collected:**	01/15/21 10:12
Sample Matrix:	Water	**Date Received:**	01/18/21 12:50
Sample Name:	TB-011521	**Units:**	ug/L
Lab Code:	K2100478-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Bromodichloromethane	ND	U	0.50	0.091	1	01/21/21 18:51	
Carbon Tetrachloride	ND	U	0.50	0.096	1	01/21/21 18:51	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	01/21/21 18:51	
Dibromochloromethane	ND	U	0.50	0.14	1	01/21/21 18:51	*
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	01/21/21 18:51	
1,1-Dichloroethene	ND	U	0.50	0.080	1	01/21/21 18:51	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	01/21/21 18:51	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	01/21/21 18:51	
Hexachlorobutadiene	ND	U	2.0	0.11	1	01/21/21 18:51	
Methylene Chloride	**0.13**	**J**	2.0	0.10	1	01/21/21 18:51	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	01/21/21 18:51	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	01/21/21 18:51	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	01/21/21 18:51	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	01/21/21 18:51	
Trichlorofluoromethane (CFC 11)	ND	U	0.50	0.12	1	01/21/21 18:51	
Vinyl Chloride	ND	U	0.50	0.075	1	01/21/21 18:51	

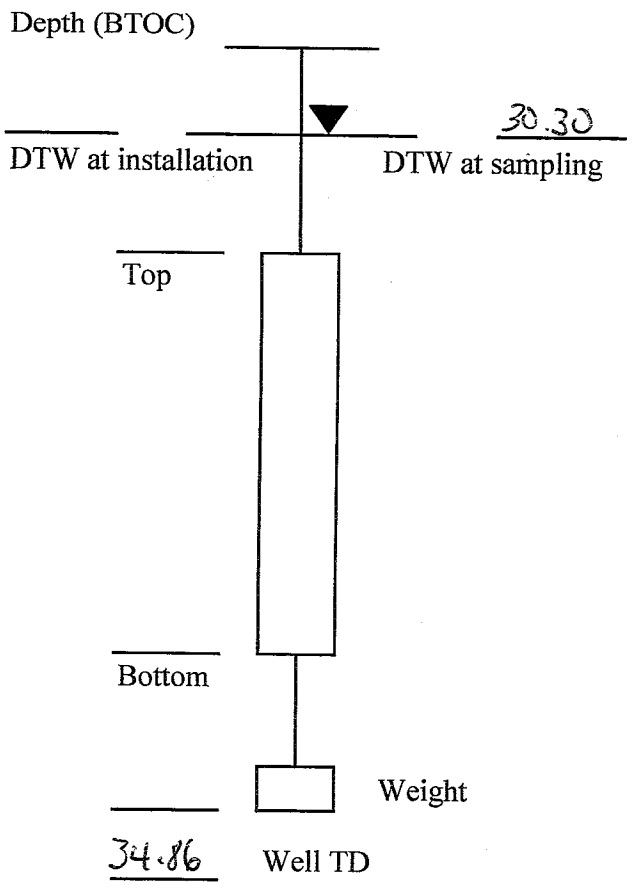
Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	01/21/21 18:51	
Dibromofluoromethane	94	73 - 122	01/21/21 18:51	
Toluene-d8	95	65 - 144	01/21/21 18:51	

APPENDIX C
Groundwater Purge and Sampling Forms

Winter 2021
Groundwater Purge and Sampling Forms

Passive Diffusion Bag Sampling Form

Well Identification: AMW-1A



Site Location: Boomsnub

Project Number: 161303

Well Diameter: —

PDB Installation Date: — Time: —

Sample Information

Sample No: 2105-010

Sample Date: 2/2/21 Time: 0955

Sampling Personnel: RR

Analyses: EPA-8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Yes

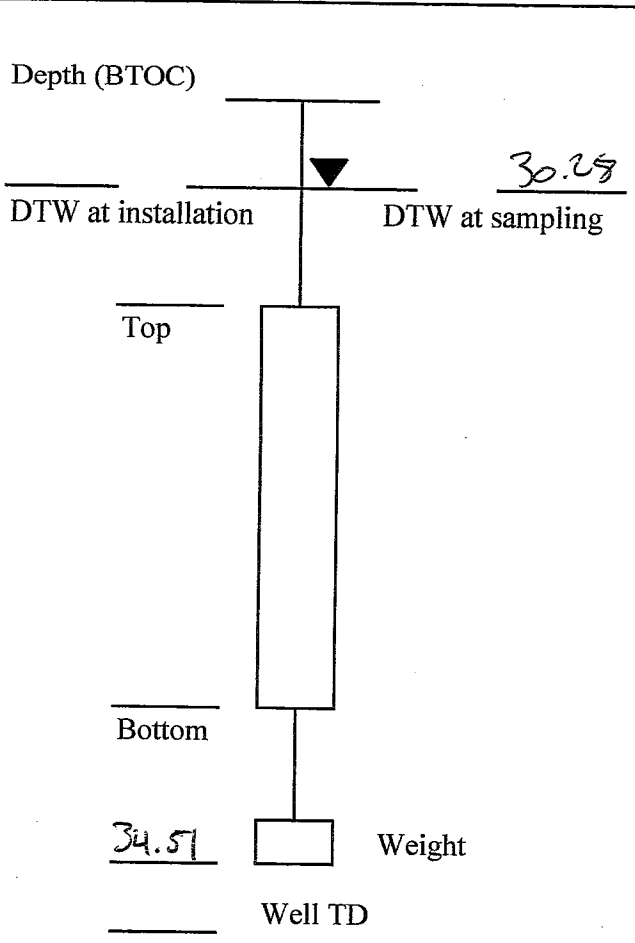
Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Yes

Comments: ORP: 252.7 DO: 101.5% 11.64 mg/L

Passive Diffusion Bag Sampling Form

Well Identification: AMW - 2A



Site Location: Boomsnub

Project Number: 161123

Well Diameter: —

PDB Installation Date: — Time: —

Sample Information

Sample No: 2105-002 / 205-003 Dup. 1037

Sample Date: 2/1/21 Time: 1033

Sampling Personnel: RR

Analyses: EPA 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: ORP= 140 . DO=0

Passive Diffusion Bag Sampling Form

Well Identification: AMW-4A

Depth (BTOC)

31.93 — DTW at installation

36.2 — DTW at sampling

Top

Bottom

34.2 — Weight

Well TD

Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 10/20/20 Time: 1530

Sample Information

Sample No: 2105-001

Sample Date: 2/1/21 Time: 1007

Sampling Personnel: RR

Analyses: 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments:

Ground Water Purge and Sampling Form

Well Identification	AMW-12f
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Yes
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Yes
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2019)~~ Date: 2/4/21

Project Number: ~~1524058~~ Personnel: PE RR

Purge Method: X Low Flow ___ Conventional ___ None

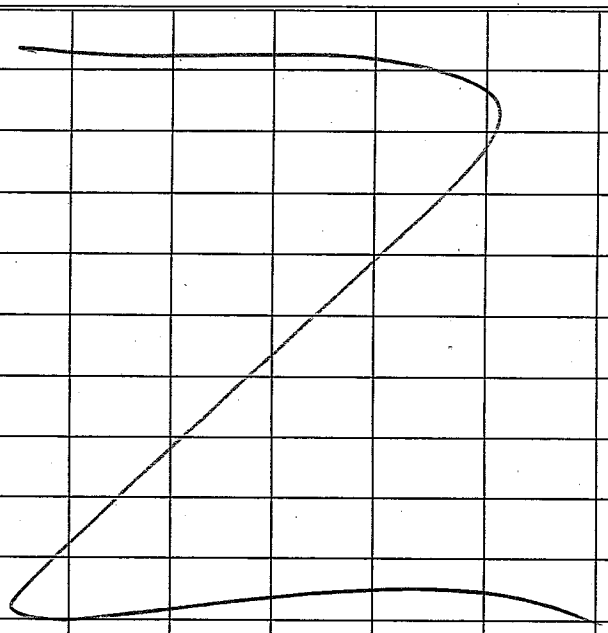
Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) X None Grundfos

Sampling Equipment: ___ Extraction Well X Redi-flo Pump ___ Passive Diffusion Bag

Weather Conditions: Rain 45°F

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time		1330	1335	1338	1341	1344
Depth to Ground water (ft btoc)		20.61	20.61	20.61	20.61	20.70
Total Groundwater Purged (gallons, liters)		0	1.25	2.00	2.75	3.50
Purge Rate (gpm, ft^3/min, ml/min)		.25	.25	.25	.25	.25
pH	+/- 0.1	6.87	6.70	6.68	6.59	6.53
Conductivity (mS/cm)	+/- 3%	0.132	0.127	0123	0.121	0.120
Turbidity (NTU)	+/- 10%	5.70	6.02	6.08	6.12	6.19
Disssolved Oxygen (mg/L)	+/- 0.3 mg/l	6.93	6.97	7.06	7.27	7.32
Temperature (°C)	+/- 10%	13.8	14.6	14.6	14.9	14.9
ORP/eH (mV)	+/- 10 mV	69.2	77.5	85.2	92.6	96.7
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear



Sample Identification: 2105-037

Time Sampled: 1348

Purge water disposed To: Boomsnub

# of bottles	
3	VOCs by 8260C
—	Total Chromium by 200.7
9	Other:

Comments: Metals, Anion, TOC, DOC, COD, Volatile Fatty acids, Dissolved gases

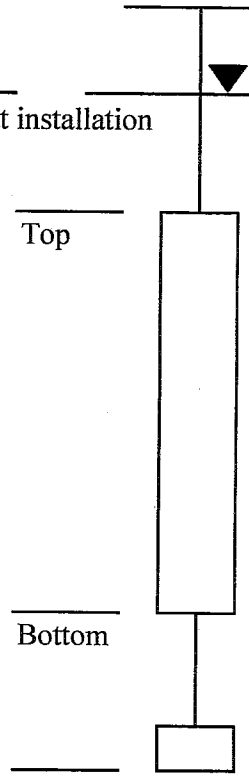
Passive Diffusion Bag Sampling Form

Well Identification: AMW-27

Depth (BTOC)

DTW at installation: —

DTW at sampling: 32.24



88.0 Well TD

Site Location: Boomsnub

Project Number: 161303

Well Diameter: —

PDB Installation Date: — Time: —

Sample Information

Sample No: 2105-012

Sample Date: 2/2/21 Time: 1018

Sampling Personnel: RR

Analyses: EPA-8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

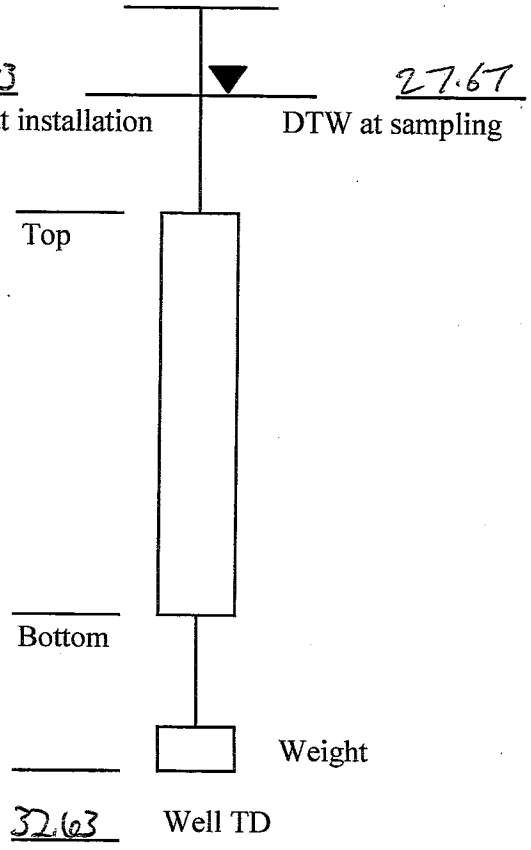
Well Casing Plug Locked and in Good Condition? Y

Comments:

Passive Diffusion Bag Sampling Form

Well Identification: AMW-53A

Depth (BTOC)



Site Location: Boomsnub
Project Number: 161323
Well Diameter:
PDB Installation Date: 10/21/20 Time: 1025

Sample Information

Sample No: 2105-009
Sample Date: 2/1/21 Time: 1636
Sampling Personnel: RR
Analyses: EPA-8260C
Biofilm Present (Y/N): N
New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y
Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D
Well Casing Plug Locked and in Good Condition? Y
Comments: ORP=293 DO=0

Ground Water Purge and Sampling Form

Well Identification	AMW-59
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	140.64

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2-2-21

Project Number: ~~1449545 2014~~ 5 Personnel: SK/RR

Purge Method: X Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well X Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well X Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Mostly Cloudy 44°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1045	1055	1100	1105	1110	1115				
Depth to Ground water (ft btoc)	20.25	20.35	20.39	20.54	20.60	20.78				
Total Groundwater Purged(gallons, liters, other)						11.0				
Purge Rate (gpm, ft^3/min, ml/min, other)	600	600	600	600	600	600				
pH	6.58	6.59	6.60	6.60	6.61	6.61				
Conductivity (mS/cm)	.515	.515	.514	.517	.518	.516				
Turbidity (NTU)	42.01	87.88	117.50	114.48	142.98	159.44				
Disssolved Oxygen (mg/L)	.86	.78	.75	.74	.73	.73				
Temperature (°C)	13.5	13.3	13.6	13.3	13.1	13.1				
ORP/eH (mV)	142.5	182.0	197.1	218.7	224.5	223.6				
Color of Purged Water (gray, brown, red, clear)	Black	Black	Black	Clear	clear/Black	clear/Black				

Sample Identification: 2105-11 (2105-13 DUP)

Time Sampled: 1200

Purge water disposed To: Boomsnub

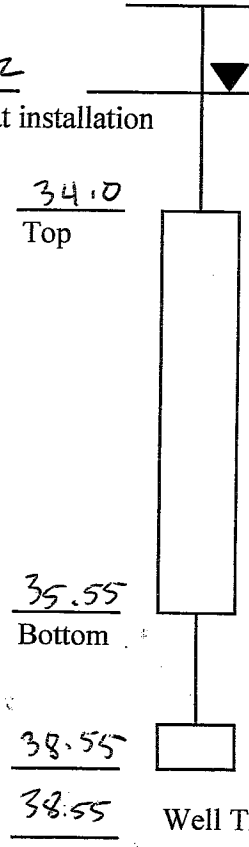
Analysis	# of Bottles
✓ VOCs by 8260C	13
✓ Total Chromium	3 VOAs DUP
✓ Other	

Comments:
Turbidity from YSI not accurate
Turbidity from meter is 12.19

Passive Diffusion Bag Sampling Form

Well Identification: MW-1A

Depth (BTOC)



33.02 DTW at installation

32.0 DTW at sampling

34.0 Top

35.55 Bottom

38.55 Weight

38.55 Well TD

Site Location: Boomsnub

Project Number: 161383

Well Diameter: —

PDB Installation Date: 1/7/21 Time: 11:10

Sample Information

Sample No: 2105-004

Sample Date: 2/1/21 Time: 1059

Sampling Personnel: RR

Analyses: EPA 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

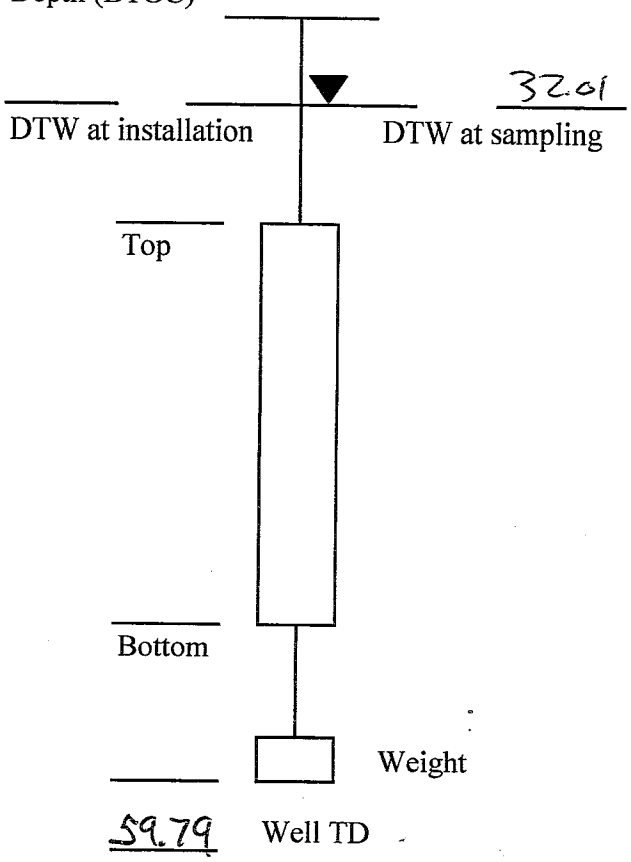
Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: ORP= 301 , DO = 50

Passive Diffusion Bag Sampling Form

Well Identification: MW-1B



Site Location: Boomsnub

Project Number: 1611303

Well Diameter: —

PDB Installation Date: — Time: —

Sample Information

Sample No: 2105-005

Sample Date: 2/1/21 Time: 1106

Sampling Personnel: RR

Analyses: EDA 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: ORP = 293, DO = 5.0

Passive Diffusion Bag Sampling Form

Well Identification: MW-1C

Depth (BTOC)

32.03

DTW at installation — DTW at sampling

Top

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number: 161303

Well Diameter:

PDB Installation Date: Time:

Sample Information

Sample No: 2105-006

Sample Date: 2/1/21 Time: ~~2105-006~~ BN

Sampling Personnel: RR

Analyses: EPA - 8260C

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): ~~Y~~

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: ~~ORP=~~ ~~, DO=~~ BH No Bag, felt like pulling bag out of mud

* No Sample *

Ground Water Purge and Sampling Form

Well Identification	MW-2A
Well Diameter (inches)	2"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	37.5

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/1/21

Project Number: ~~1449545 2014~~ 5 Personnel: RR

Purge Method: ___Low Flow ___Conventional ___None

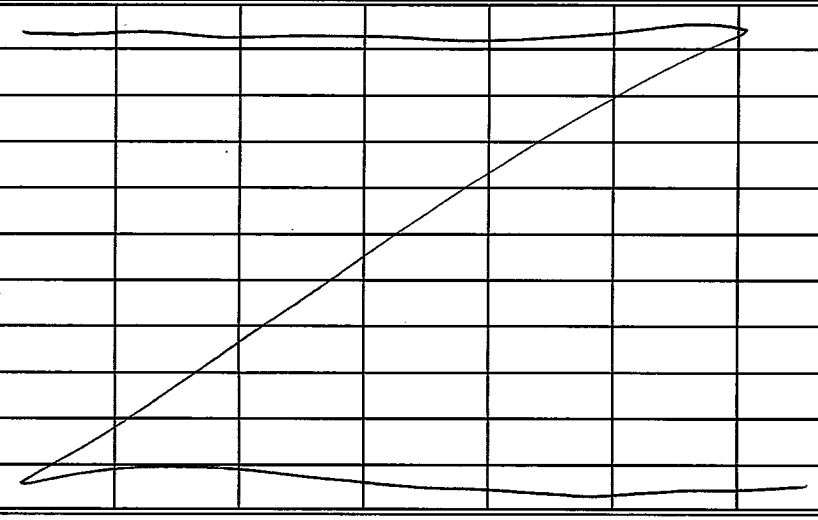
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other Bailer

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: Raining

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1531	1536	1539
Depth to Ground water (ft btoc)	29.45	29.45	29.45
Total Groundwater Purged(gallons, liters, other)	—	—	—
Purge Rate (gpm, ft^3/min, ml/min, other)	—	—	—
pH	6.32	6.56	6.54
Conductivity (mS/cm)	0.148	0.156	0.160
Turbidity (NTU)	123.68	127.15	123.13
Disssolved Oxygen (mg/L)	9.38	9.37	9.18
Temperature (°C)	13.2	13.3	13.2
ORP/eH (mV)	237.4	231.4	233.4
Color of Purged Water (gray, brown, red, clear)	foggy	foggy	foggy



Sample Identification: 2105-008

Time Sampled: 1542

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	3	
___ Total Chromium	___	
___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-2B / MW-2B
Well Diameter (inches)	2" / 2"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ 161103 Date: 2/1/21

Project Number: ~~1449545 2014 5~~ Personnel: RR

Purge Method: ___Low Flow ___Conventional ___None

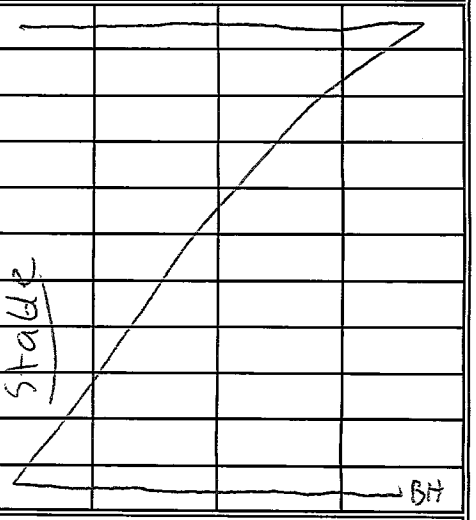
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ✓Diffusion Bag

Weather Conditions: Raining

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1326	1331	1336	1341	1346	1351	
Depth to Ground water (ft btoc)	29.46	29.46	30.0	30.0	30.0	30.0	
Total Groundwater Purged(gallons, liters, other)	0.6	1.2	1.8	2.4	3.0	3.6	
Purge Rate (gpm, ft^3/min, ml/min, other)	0.6	0.6	0.6	0.6	0.6	0.6	
pH	6.29	6.28	6.28	6.28	6.28	6.28	
Conductivity (mS/cm)	0.173	0.172	0.172	0.171	0.170	0.170	
Turbidity (NTU)	35.89	34.21	30.08	14.81	9.54	8.12	
Disssolved Oxygen (mg/L)	102.40	90.7	8.85	9.18	9.21	9.22	
Temperature (°C)	14.5	14.5	14.6	14.8	15.0	14.9	
ORP/eH (mV)	226.1	226.0	228.0	230.4	232.1	234.1	
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	



Sample Identification: 2105-006

Time Sampled: 1249 - PDB Sample

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-2R
Well Diameter (inches)	2"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2019)~~ Date: 2/1/21

Project Number: ~~1524058~~ Personnel: RR

Purge Method: ___Low Flow ___Conventional ___None

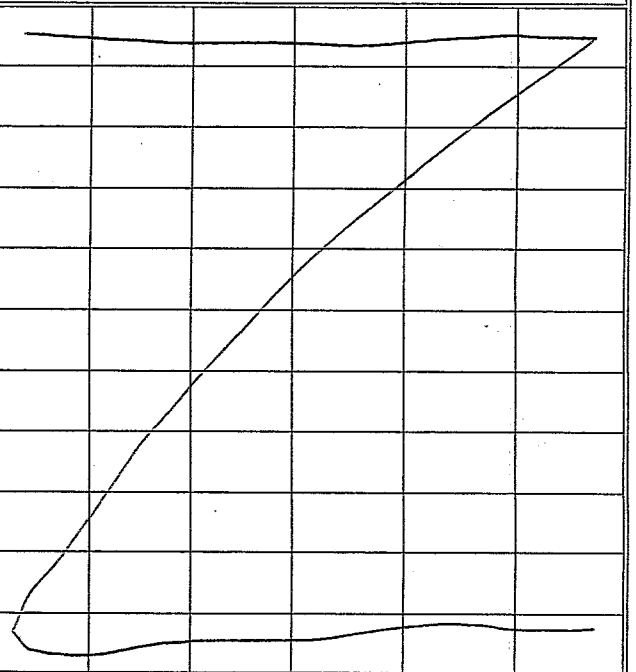
Purge Equipment: ___Extraction Well ✓Redi-flo Pump (Ded) ___None

Sampling Equipment: ___Extraction Well ✓Redi-flo Pump ___Passive Diffusion Bag

Weather Conditions: Raining

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1412	1417	1422	1427	1432	1437	
Depth to Ground water (ft btoc)	30.9	30.9	30.9	30.9	30.9	30.9	
Total Groundwater Purged (gallons, liters)	0	1.2	1.8	2.4	3.0	3.6	
Purge Rate (gpm, ft^3/min, ml/min)	0.6	0.6	0.6	0.6	0.6	0.6	
pH +/- 0.1	6.35	6.24	6.20	6.36	6.37	6.38	
Conductivity (mS/cm) +/- 3%	0.178	0.177	1.78	0.178	0.178	0.178	
Turbidity (NTU) +/- 10%	95.35	64.48	27.96	4.56	0.72	0.38	
Disssolved Oxygen (mg/L) +/- 0.3 mg/l	9.33	9.27	9.12	9.27	9.29	9.28	
Temperature (°C) +/- 10%	12.7	12.9	13.4	13.7	13.8	13.8	
ORP/eH (mV) +/- 10 mV	236.5	238.8	241.2	235.0	233.5	233.3	
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	



Sample Identification: 2105-007

Time Sampled: 1439

Purge water disposed To: Boomsnub

# of bottles

3 VOCs by 8260C

___ Total Chromium by 200.7

___ Other:

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-3A
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	32.67

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2-2-21

Project Number: ~~1449545.2014~~ 5 Personnel: SK / RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Partly Cloudy, 46°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1525	1530	1533	1536						
Depth to Ground water (ft btoc)	27.22	27.22	27.22	27.22						
Total Groundwater Purged(gallons, liters, other)										
Purge Rate (gpm, ft^3/min, ml/min, other)	115.7	142.2	142.2	142.2						
pH	6.25	6.25	6.25	6.25						
Conductivity (mS/cm)	.084	.084	083	.084						
Turbidity (NTU)	7.84	8.0	8.00	5.53						
Disssolved Oxygen (mg/L)	8.15	8.10	8.08	7.86						
Temperature (°C)	16.3	15.6	15.7	19.5						
ORP/eH (mV)	413.2	412.9	413.4	388.5						
Color of Purged Water (gray, brown, red, clear)	Clear	Clear	Clear							

Sample Identification: 2105-019

Time Sampled: 1540

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	1
✓ Total Chromium	___
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-4A
Well Diameter (inches)	2"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	37.69

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2.4.21

Project Number: ~~1449545 2014.5~~ Personnel: BH /SK

Purge Method: ✓ Low Flow ___Conventional ___None

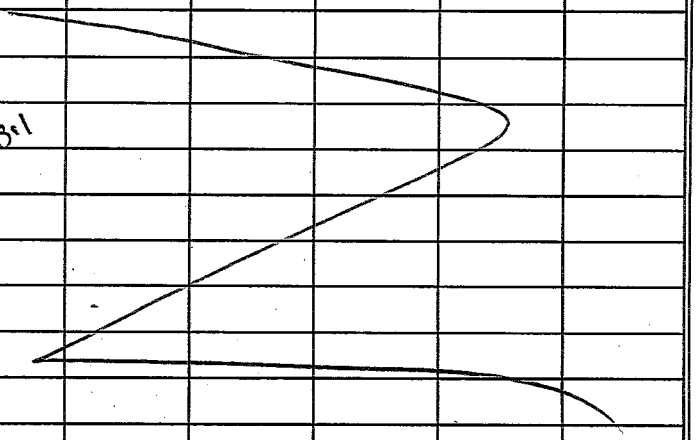
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: Rain, 41°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0935	0940	0943	0946						
Depth to Ground water (ft btoc)	27.03	27.03	27.05	27.75						
Total Groundwater Purged(gallons, liters, other)	.3 sk	.3 sk								
Purge Rate (gpm, ft^3/min, ml/min, other)	.3	.3	.3	.3	1.0 gal					
pH	6.20	6.21	6.24	6.26						
Conductivity (mS/cm)	.590	.575	.578	.579						
Turbidity (NTU)	27.20	7.57	2.32	2.1						
Disssolved Oxygen (mg/L)	7.20	7.15	7.17	7.16						
Temperature (°C)	13.4	13.6	13.6	13.6						
ORP/eH (mV)	335.4	331.4	326.1	322.4						
Color of Purged Water (gray, brown, red, clear)	Clear	Clear	Clear	Clear						



Sample Identification: 2105-34

Time Sampled: 0948

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	1
X Total Chromium	___
___ Other	___

Comments: 10' of water in well used peristaltic

Ground Water Purge and Sampling Form

Well Identification	MW4B
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	44.77

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2-4-21

Project Number: ~~1449545 2014 5~~ Personnel: BH/SK

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Rain / 41°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1005	1010	1015	1020	1025	1030
Depth to Ground water (ft btoc)	21.21	21.21	27.78	27.28	27.8	
Total Groundwater Purged(gallons, liters, other)	~~0~~ 5K					5.0
Purge Rate (gpm, ft^3/min, ml/min, other)	.3	.3	.3	.3	.3	.3
pH	6.56	6.58	6.51	6.48	6.47	6.47
Conductivity (mS/cm)	.510	.489	.498	.495	.493	.496
Turbidity (NTU)	1747.8	1353	769	540	2.1	5.7
Disssolved Oxygen (mg/L)	76.7	8.27	8.46	8.31	8.5	8.56
Temperature (°C)	13.4	13.5	13.5	13.6	13.5	13.5
ORP/eH (mV)	291.3	273.0	271.9	271.2	265.9	267.0
Color of Purged Water (gray, brown, red, clear)	Brown Cloudy	Cloudy	Cloudy	Cloudy	Clear	Clear

Sample Identification: 2105-36

Time Sampled: 1035

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	1
✓ Total Chromium	___
___ Other	___

Comments: Using peristaltic pump w/ dedicated tubing

Ground Water Purge and Sampling Form

Well Identification	~~MW-5C~~ MW-4C	Site Location: Boomsnub ~~(Fall 2014)~~						Date: 2/4/21		
Well Diameter (inches)	2	Project Number: ~~1449545.2014.5~~						Personnel: BH/SK		
Well Monument Locked and Good Condition?	Y	Purge Method: ✓ Low Flow ___ Conventional ___ None								
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other								
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag								
PID Reading in Well (ppm)	NA	Weather Conditions: Cloudy/Rainy 41°								
Well Total Depth (ft btoc)	80	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons								
Time	1110	1115	1120	1125	1130	1135				
Depth to Ground water (ft btoc)	27.01	29.63	29.63	29.63	29.63	29.63				
Total Groundwater Purged(gallons, liters, other)	.									
Purge Rate (gpm, ft^3/min, ml/min, other)	.3	.3	.3	.3	.3	.3				
pH	6.45	6.52	6.53	6.53	6.53	6.53				
Conductivity (mS/cm)	.682	.681	.678	.674	.673	.673				
Turbidity (NTU)	133.27	18.87	42.1	14.2	9.2	9.2				
Disssolved Oxygen (mg/L)	8.53	8.20	8.46	8.40	8.38	8.37				
Temperature (°C)	17.9	15.9	15.2	15.1	15.2	15.1				
ORP/eH (mV)	270.2	290.2	273.1	263.6	260.3	251.2				
Color of Purged Water (gray, brown, red, clear)	Clear	Clear	Clear	Clear	Clear	Clear				

Sample Identification: 2105-38	Analysis	# of Bottles	Comments:
Time Sampled: 1140	___ VOCs by 8260C	1	
	✓ Total Chromium	___	
Purge water disposed To: Boomsnub	___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-6A
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	31.5

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/12/21

Project Number: ~~1449545 2014~~ 5 Personnel: PE

Purge Method: ✓ Low Flow ___ Conventional ___ None

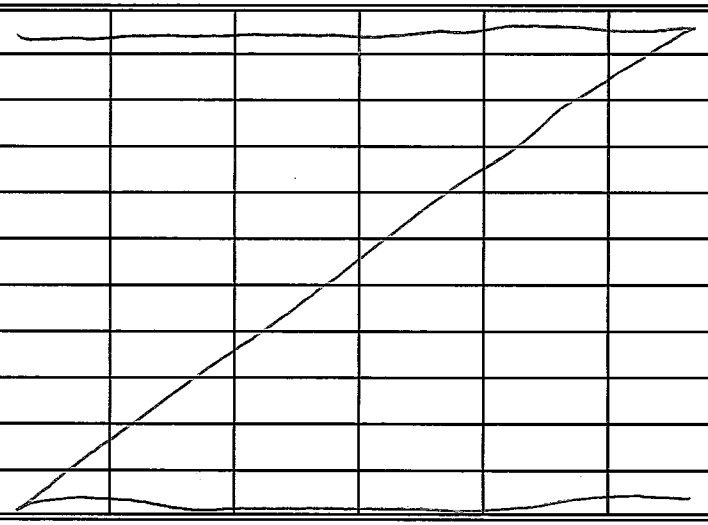
Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Raining

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1117	1122	1127	1132	
Depth to Ground water (ft btoc)	26.05	26.05	26.20	26.20	
Total Groundwater Purged(gallons, liters, other)	~	1.5	3.0	4.5	
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	
pH	5.70	5.80	5.82	5.85	
Conductivity (mS/cm)	0.132	0.132	0.131	0.130	
Turbidity (NTU)	0.29	0.18	0.31	0.96	
Disssolved Oxygen (mg/L)	6.35	6.09	6.02	5.99	
Temperature (°C)	15.6	16.7	17.1	17.5	
ORP/eH (mV)	210.1	203.2	198.7	194.7	
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear		



Sample Identification: 2105-018

Time Sampled: 1134

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	1
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-6B
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ Date:

Project Number: ~~1449545 2014 5~~ Personnel:

Purge Method: ✓Low Flow ___Conventional ___None

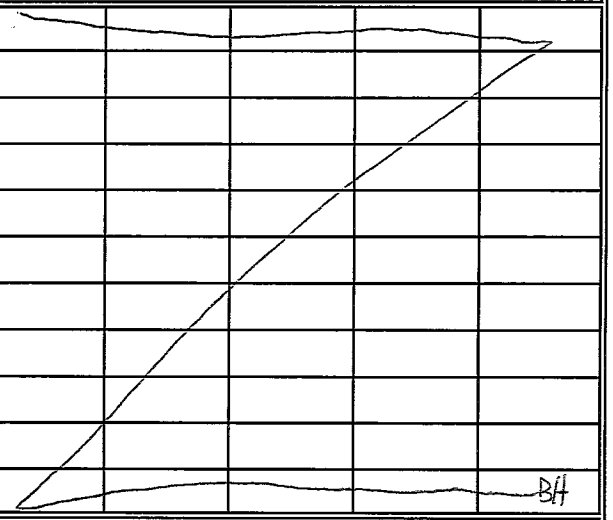
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 48° partly cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1256	1301	1306	1311	1316	
Depth to Ground water (ft btoc)	20.65	20.65	20.65	20.65	20.65	
Total Groundwater Purged(gallons, liters, other)	0	1.5	3.0	4.5	6.0	
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	
pH	6.13	6.24	6.33	6.33	6.33	
Conductivity (mS/cm)	0.126	0.127	0.128	0.129	0.129	
Turbidity (NTU)	0.19	0.64	0.46	0.14	0.45	
Disssolved Oxygen (mg/L)	7.09	6.14	6.12	6.17	6.19	
Temperature (°C)	13.0	14.4	14.9	15.0	15.0	
ORP/eH (mV)	187.4	178.7	179.4	181.5	182.3	
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	BH



Sample Identification: 2105-MW20	Analysis	# of Bottles	Comments:
Time Sampled: 1318	___ VOCs by 8260C	___	
	✓Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-1B
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/2/21

Project Number: ~~1449545 2014 5~~ Personnel: PE

Purge Method: ✓Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 48°, Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	~~1356~~	1401	1406	1411	1416					
Depth to Ground water (ft btoc)	23.01	23.02	23.01	23.01	23.01					
Total Groundwater Purged(gallons, liters, other)	~~0.30~~	1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3					
pH	6.37	6.36	6.37	6.36	6.36					
Conductivity (mS/cm)	0.147	0.148	0.149	0.149	0.150					
Turbidity (NTU)	0.64	0.41	0.28	0.35	0.09					
Disssolved Oxygen (mg/L)	8.97	8.91	8.85	8.79	8.70					
Temperature (°C)	13.0	13.2	13.7	13.8	13.8					
ORP/eH (mV)	179.0	177.8	174.6	172.1	171.1					
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear					

Sample Identification: 205-022

Time Sampled: 1419

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓Total Chromium	1
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-13C
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/2/21

Project Number: ~~1449545 2014 5~~ Personnel: BG

Purge Method: ✓Low Flow ___Conventional ___None

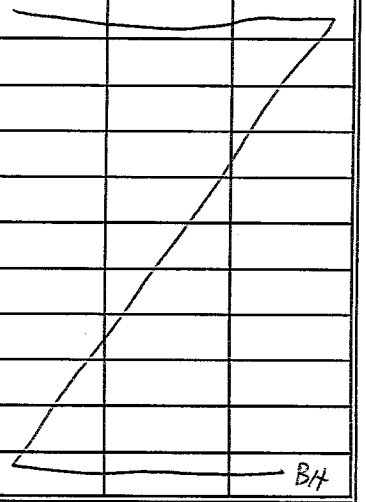
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___~~Other~~

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 48° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1450	1455	1500	~~1505~~	1510	1515	1520
Depth to Ground water (ft btoc)	19.59	19.59	19.59	19.59	19.59	19.59	19.59
Total Groundwater Purged(gallons, liters, other)	-	1.5	3.0	4.5	6.0	7.5	9.0
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
pH	7.38	6.67	6.51	6.37	6.34	6.34	6.34
Conductivity (mS/cm)	0.187	0.192	0.181	0.174	0.171	0.170	0.169
Turbidity (NTU)	45.18	40.03	17.57	8.97	5.31	3.65	2.46
Disssolved Oxygen (mg/L)	5.15	4.59	5.19	6.10	6.50	6.75	6.95
Temperature (°C)	12.7	13.1	13.3	13.4	13.5	13.6	13.6
ORP/eH (mV)	154.3	137.7	130.5	136.3	141.5	143.4	147.7
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	clear



Sample Identification: 2105-024 ~~Duplicate~~

Time Sampled: 1523

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-14-C
Well Diameter (inches)	
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	81.5

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 7-24-21

Project Number: ~~1449545 2014 5~~ Personnel: SK/RP

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well X Redi-flo Pump (Ded) ___Other

Sampling Equipment: ___Extraction Well X Redi-flo Pump ___Diffusion Bag

Weather Conditions: Rainy/Cloudy 46°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	~~1244~~ 1249	1254	1300	1305	1310					
Depth to Ground water (ft btoc)	~~19.40~~ 19.40	20.20	20.20	20.20	20.20					
Total Groundwater Purged(gallons, liters, other)					10.00					
Purge Rate (gpm, ft^3/min, ml/min, other)	400	400	400	400	400					
pH	6.38	6.34	6.33	6.33	6.33					
Conductivity (mS/cm)	.121	.124	.124	.125	.124					
Turbidity (NTU)	27.20	19								
Disssolved Oxygen (mg/L)	.93	1.22	1.38	1.57	1.55					
Temperature (°C)	14.7	14.7	14.9	14.9	14.9					
ORP/eH (mV)	394.1	412.7	403.3	395.3	398.3					
Color of Purged Water (gray, brown, red, clear)	tan	tan	clear	clear	clear					

Sample Identification: 2105-15

Time Sampled: 1330

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	13
✓ Total Chromium	
✓ Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-14E
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	176

Site Location: Boomsnub ~~(Fall 2019)~~ Date: 2-2-21

Project Number: ~~1524058~~ Personnel: SK/RR

Purge Method: X Low Flow ___Conventional ___None

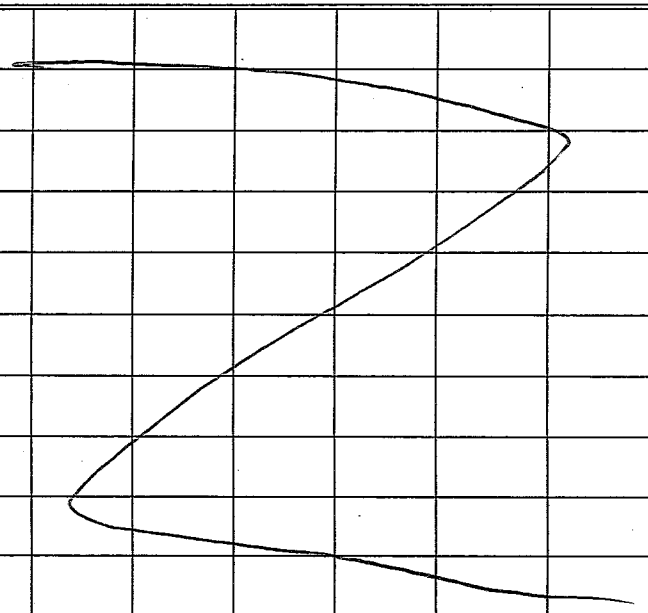
Purge Equipment: ___Extraction Well X Redi-flo Pump (Ded) ___None

Sampling Equipment: ___Extraction Well X Redi-flo Pump ___Passive Diffusion Bag

Weather Conditions: Partly Cloudy, 46°

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1400	1410	1415	1420	
Depth to Ground water (ft btoc)	17.4	18.2	18.2	18.6	
Total Groundwater Purged (gallons, liters)				3.0	
Purge Rate (gpm, ft³/min, ml/min)	300	300	300	300	
pH +/- 0.1	6.69	6.65	6.65	6.65	
Conductivity (mS/cm) +/- 3%	.124	.124	.124	.124	
Turbidity (NTU) +/- 10%	119	12.67	7.63	7.93	
Disssolved Oxygen (mg/L) +/- 0.3 mg/l	6.03	6.03	6.06	6.07	
Temperature (°C) +/- 10%	14.0	14.1	14.1	14.1	
ORP/eH (mV) +/- 10 mV	403.6	423.2	421.2	417.7	
Color of Purged Water (gray, brown, red, clear)	Black	Black	Clear	Clear	



Sample Identification: 2105-017

Time Sampled: 1425

Purge water disposed To: Boomsnub

# of bottles 13

✓ VOCs by 8260C

✓ Total Chromium by 200.7

✓ Other:

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-15E
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub (Fall 2014) Date: 2/3/21

Project Number: 1449545 2014 5 Personnel: PE

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 48°, cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1331	1336	1341	1346	1351	1356	1401			
Depth to Ground water (ft btoc)	14.7	14.7	14.7	14.7	14.7	14.7	14.7			
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0	7.5	9.0			
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3	0.3			
pH	7.59	6.66	6.58	6.55	6.55	6.55	6.54			
Conductivity (mS/cm)	0.138	0.190	0.191	0.194	0.195	0.195	0.196			
Turbidity (NTU)	0.31	9.33	5.57	1.10	0.04	0.02	0.68			
Disssolved Oxygen (mg/L)	9.34	6.75	6.59	6.33	6.19	6.18	6.11			
Temperature (°C)	12.6	12.8	13.2	13.3	13.3	13.3	13.4			
ORP/eH (mV)	133.3	137.2	141.2	147.6	150.6	151.6	153.3			
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	Clear			BH

Sample Identification: B105-030	Analysis	# of Bottles	Comments:
Time Sampled: 1405	✓ VOCs by 8260C	3	
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-18D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2019)~~ Date: 2/4/21

Project Number: ~~1524058~~ Personnel: PE / AR

Purge Method: X Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) X None

Sampling Equipment: ___ Extraction Well X Redi-flo Pump ___ Passive Diffusion Bag

Weather Conditions: cloudy 46°F

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1020	1025	1030	1035	1040	1045	1050	1055	1100	~~1105~~	~~1110~~	
Depth to Ground water (ft btoc)	9.68	9.66	9.68	9.68	9.68	9.68	9.68	9.68	9.68	9.68	9.68	
Total Groundwater Purged (gallons, liters)	0	2	4	6	8	10	12	14	16	18	20	
Purge Rate (gpm, ft³/min, ml/min)	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4	
pH +/- 0.1	6.35	6.40	6.41	6.43	6.43	6.43	6.43	6.44	6.43			
Conductivity (mS/cm) +/- 3%	0.180	0.179	0.178	0.178	0.177	0.177	0.178	0.179	0.180			
Turbidity (NTU) +/- 10%	145.17	146.53	105.87	83.29	60.64	39.92	37.42	37.45	37.54			
Disssolved Oxygen (mg/L) +/- 0.3 mg/l	1.52	1.15	1.02	0.94	0.91	0.88	0.87	0.85	0.83			
Temperature (°C) +/- 10%	11.9	12.1	12.1	12.2	12.3	12.3	12.3	12.4	12.4			
ORP/eH (mV) +/- 10 mV	150.0	105.9	82.3	63.1	55.2	49.2	43.4	34.2	25.8			
Color of Purged Water (gray, brown, red, clear)	gray	gray	gray	gray	gray	gray	gray	gray	gray			

Sample Identification: 2105-033

Time Sampled: 1108

Purge water disposed To: Boomsnub

# of bottles	
3	VOCs by 8260C
1	Total Chromium by 200.7
9	Other:

Comments: In-situ parameters

Bottles for metals/dissolved Fe field filtered due to high turbidity.

Ground Water Purge and Sampling Form

Well Identification	MW-18E
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2019)~~ Date: 2/4/21

Project Number: ~~1524058~~ Personnel: PEZ / KR

Purge Method: X Low Flow ___ Conventional ___ None

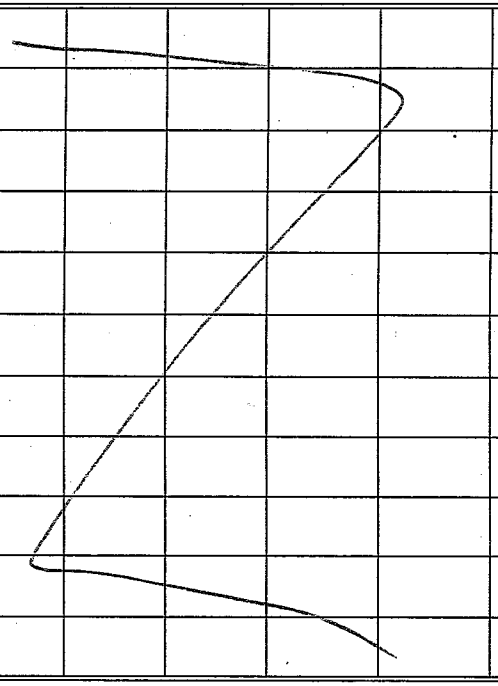
Purge Equipment: ___ Extraction Well ___ Redi-flo Pump ~~(Ded)~~ X None Grundfos

Sampling Equipment: ___ Extraction Well X Redi-flo Pump ___ Passive Diffusion Bag

Weather Conditions: Cloudy 46°F

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time		1145	1150	1155	1200	1205	1210
Depth to Ground water (ft btoc)		10.62	10.62	10.62	10.62	10.62	10.63
Total Groundwater Purged (gallons, liters)		0	1.5	3.0	4.5	6.0	7.5
Purge Rate (gpm, ft^3/min, ml/min)		.3	.3	.3	.3	.3	.3
pH	+/- 0.1	6.93	6.96	6.95	6.97	6.99	7.01
Conductivity (mS/cm)	+/- 3%	0.383	0.382	0381	0.381	0.379	0.379
Turbidity (NTU)	+/- 10%	58.93	57.33	42.95	42.31	42.27	41.98
Disssolved Oxygen (mg/L)	+/- 0.3 mg/l	1.35	1.00	0.94	0.90	0.87	0.85
Temperature (°C)	+/- 10%	11.7	11.8	11.8	11.9	12.0	12.0
ORP/eH (mV)	+/- 10 mV	-41.2	-93.1	-106.2	-115.9	-120.5	-127.8
Color of Purged Water (gray, brown, red, clear)		clear	gray	gray	clear	clear	clear



Sample Identification: 2105-035

Time Sampled: 1216

Purge water disposed To: Boomsnub

# of bottles	
3	VOCs by 8260C
1	Total Chromium by 200.7
9	Other:

Comments: In-Situ Parameters

Bottles for metals / dissolved Fe field filtered due to high turbidity

Full

Ground Water Purge and Sampling Form

Well Identification	MW-19D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	92.2

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2-3-21

Project Number: ~~1449545~~ 2014 5 Personnel: RR / SK

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Partly Cloudy / 48°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1340	1345	1350	1355	1400	1405	1410	1415	1420	1425
Depth to Ground water (ft btoc)	9.4	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Total Groundwater Purged(gallons, liters, other)	~~250~~ SL									12
Purge Rate (gpm, ft^3/min, ml/min, other)	250	250	250	250	250	250	250	250	250	200
pH	6.81	6.86	6.87	6.82	6.77	6.75	6.74	6.74	6.74	6.74
Conductivity (mS/cm)	.228	.235	.235	.217	.202	.196	.194	.193	.192	.192
Turbidity (NTU)	189.21	129.87	75.58	69.66	64.15	55.0	42	34	20	17.1
Disssolved Oxygen (mg/L)	1.59	1.20	.95	.90	.84	.83	.83	.82	.82	.81
Temperature (°C)	12.7	13.0	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
ORP/eH (mV)	269.7	298.3	294.0	291.9	287.4	284.5	283.6	282.0	281.6	281.0
Color of Purged Water (gray, brown, red, clear)	Black	Black	Grey	Grey	Clear	Clear	Clear	Clear ✓	Clear	

Sample Identification: 210503

Time Sampled: 1430

Purge water disposed To: Boomsnub

Analysis

✓ VOCs by 8260C

✓ Total Chromium

✓ Other

# of Bottles

13 x 3 (MS/MSD)

Comments: MS/MSD

Ground Water Purge and Sampling Form

MW-20D

Well Identification	MW-20D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC
Well Casing Plug Locked and Good Condition?	~~Y~~ Y SH
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/3/21

Project Number: ~~1449545 2014~~ 5 Personnel: PE

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 46° overcast

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1108	1113	1118	1123	1128	1133				
Depth to Ground water (ft btoc)	21.02	20.08	20.08	20.08	20.08	20.08				
Total Groundwater Purged(gallons, liters, other)	0.	1.5	3.0	4.5	6.00	7.5				
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3				
pH	6.55	6.75	6.76	6.75	6.75	6.74				
Conductivity (mS/cm)	0.199	0.242	0.234	0.225	0.225	0.221				
Turbidity (NTU)	7.63	4.04	3.65	3.00	2.29	1.80				
Disssolved Oxygen (mg/L)	2.15	1.27	1.09	1.07	1.05	1.02				
Temperature (°C)	12.5	12.9	13.3	13.5	13.5	13.6				
ORP/eH (mV)	179.1	176.8	173.9	169.3	166.3	162.0				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear				

Sample Identification: 2105-028

Time Sampled: 1137

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓ VOCs by 8260C	6	
___ Total Chromium	___	
✓ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW-22D
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub (~~Fall 2014~~) Date: 2/3/21

Project Number: ~~1449545 2014 5~~ Personnel: PE

Purge Method: ✓Low Flow ___Conventional ___None

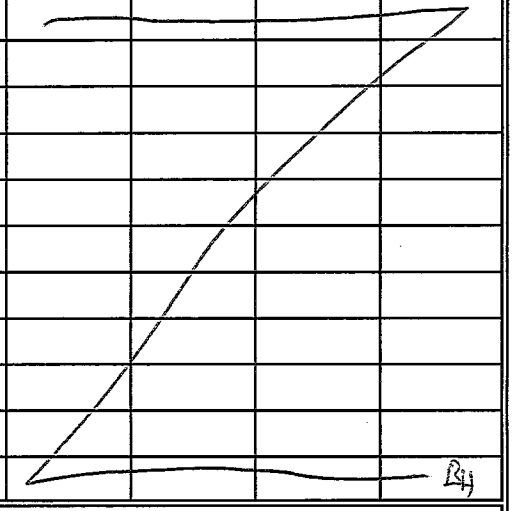
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ~~✓~~ Diffusion Bag BH

Weather Conditions: 48° overcast

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1435	1440	1445	1450	1455	1500	
Depth to Ground water (ft btoc)	20.61	20.61	20.61	20.61	20.61	20.61	
Total Groundwater Purged(gallons, liters, other)	—	1.5	3.0	4.5	6.0	7.5	
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3	
pH	6.85	7.25	7.31	7.30	7.29	7.27	
Conductivity (mS/cm)	0.215	0.247	0.247	0.244	0.239	0.237	
Turbidity (NTU)	80.29	68.47	11.87	0.81	9.81	5.93	
Disssolved Oxygen (mg/L)	4.29	1.80	1.69	1.73	1.83	1.83	
Temperature (°C)	11.1	12.2	12.5	12.7	12.8	12.7	
ORP/eH (mV)	150.0	66.1	24.6	4.6	1.5	2.5	
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear	BH



Sample Identification: 2150 - ~~032~~ BH 031

Time Sampled: 1504

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
✓Total Chromium	1
___Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-33
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	200

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2.4.21

Project Number: ~~1449545 2014 5~~ Personnel: BH/SK

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other

Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Cloudy / 43°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1255	1258	1301	1304							
Depth to Ground water (ft btoc)	132.1	133.1	133.2	133.2							
Total Groundwater Purged(gallons, liters, other)											
Purge Rate (gpm, ft^3/min, ml/min, other)	.3	.3	.3	.3							
pH	7.04	7.01	7.01	7.01							
Conductivity (mS/cm)	.914	.916	.916	.917							
Turbidity (NTU)	9.5	5.01	4.92	2.6							
Disssolved Oxygen (mg/L)	3.17	3.06	2.94	2.85							
Temperature (°C)	11.6	11.5	11.7	12.0							
ORP/eH (mV)	277.8	288.9	285.7	281.1							
Color of Purged Water (gray, brown, red, clear)	Clear	Clear	Clear	Clear							

Sample Identification: 2105-40

Time Sampled: 1305

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
___ Total Chromium	___
___ Other	___

Comments: Dedicated pump

Ground Water Purge and Sampling Form

Well Identification	MW-38
Well Diameter (inches)	2"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	82

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/3/21

Project Number: ~~1449545 2014 5~~ Personnel: PE

Purge Method: ✓Low Flow ___Conventional ___None

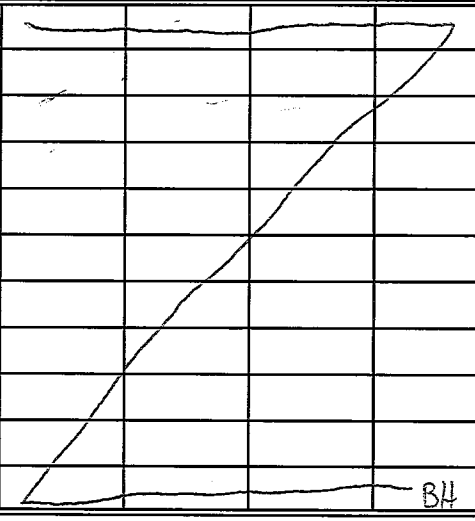
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 41°, overcast

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0942	0947	0952	0957	1002	1007
Depth to Ground water (ft btoc)	14.62	14.62	14.62	14.62	14.62	14.62
Total Groundwater Purged(gallons, liters, other)	-	1.5	3.0	4.5	6.0	7.5
Purge Rate (gpm, ft^3/min, ml/min, other)	0.3	0.3	0.3	0.3	0.3	0.3
pH	5.67	6.19	6.40	6.44	6.45	6.46
Conductivity (mS/cm)	0.128	0.163	0.179	0.179	0.178	0.176
Turbidity (NTU)	1.68	1.12	1.76	2.21	2.45	2.59
Disssolved Oxygen (mg/L)	4.21	1.45	1.35	1.33	1.32	1.30
Temperature (°C)	12.1	12.7	13.1	13.2	13.2	13.3
ORP/eH (mV)	231.5	213.2	198.8	194.0	190.3	191.3
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear



Sample Identification: 2105-026

Time Sampled: 1010

Purge water disposed To: Boomsnub

Analysis	# of Bottles	Comments:
✓VOCs by 8260C	3	
___Total Chromium	___	
✓Other	___	

17.23

MW-40

Ground Water Purge and Sampling Form

Well Identification	MW-40	Site Location: Boomsnub ~~(Fall 2014)~~				Date: 2.3.21				
Well Diameter (inches)	2	Project Number: ~~1449545 2014 5~~				Personnel: SK / PK				
Well Monument Locked and Good Condition?	Y	Purge Method: ~~Low~~ Flow ___Conventional ___None								
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC	Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ___Other								
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag								
PID Reading in Well (ppm)	NA	Weather Conditions: Cloudy, 48								
Well Total Depth (ft btoc)	66	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons								
Time	1130	1135	1140	1145	1150					
Depth to Ground water (ft btoc)	17.23	17.23	17.6	17.7	17.7					
Total Groundwater Purged(gallons, liters, other)										
Purge Rate (gpm, ft^3/min, ml/min, other)	300	300	300	300	300					
pH	6.44	6.28	6.29	6.29	6.29					
Conductivity (mS/cm)	.113	.113	.109	.108	.108					
Turbidity (NTU)	42.33	54.8	18.97	9.65	3.46					
Disssolved Oxygen (mg/L)	5.97	5.85	5.74	5.61	4.55					
Temperature (°C)	14.3	14.6	14.7	14.8	14.8					
ORP/eH (mV)	292.5	319.7	299.5	289.0	284.0					
Color of Purged Water (gray, brown, red, clear)	Cloudy	Cloudy	Clear	Clear	Clear					

Sample Identification: 2105-023 / 025	Analysis	# of Bottles	Field Dup	Comments:
Time Sampled: 1155 / 1158 Dup.	✓ VOCs by 8260C	3	3	Field Dup. VOC / TCr
	___ Total Chromium	1	1	
Purge water disposed To: Boomsnub	___ Other			

Ground Water Purge and Sampling Form

Well Identification	CPU-12
Well Diameter (inches)	4"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/4/21

Project Number: ~~1449545 2014 5~~ Personnel: PZ RR

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) X Other Grndfos

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: Rain 45°F

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1430	1435	1440	1445	1450	1455				
Depth to Ground water (ft btoc)	30.36	30.36	30.36	30.36	30.36	30.36				
Total Groundwater Purged(gallons, liters, other)	0	1.25	2.50	3.75	5.00	6.25				
Purge Rate (gpm, ft^3/min, ml/min, other)	.25	~~1.25~~.25	.25	.25	.25	.25				
pH	7.20	7.20	7.17	7.09	6.98	6.95				
Conductivity (mS/cm)	0.301	0.299	0.295	0.291	0.288	0.280				
Turbidity (NTU)	37.80	17.64	12.50	12.38	12.28	12.09				
Disssolved Oxygen (mg/L)	1.63	1.12	1.03	0.95	0.92	0.91				
Temperature (°C)	11.3	12.0	12.2	12.3	12.4	12.4				
ORP/eH (mV)	106.2	96.3	91.7	85.2	80.5	77.8				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	Clear				

Sample Identification: 2105-041

Time Sampled: 1458

Purge water disposed To: Boomsnub

Analysis	# of Bottles
3 VOCs by 8260C	___
1 Total Chromium	___
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	BENNETT
Well Diameter (inches)	—
Well Monument Locked and Good Condition?	—
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	—
Well Casing Plug Locked and Good Condition?	—
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 2/3/21

Project Number: ~~1449545 2014 5~~ Personnel: PE

Purge Method: ___Low Flow ___Conventional ✓None

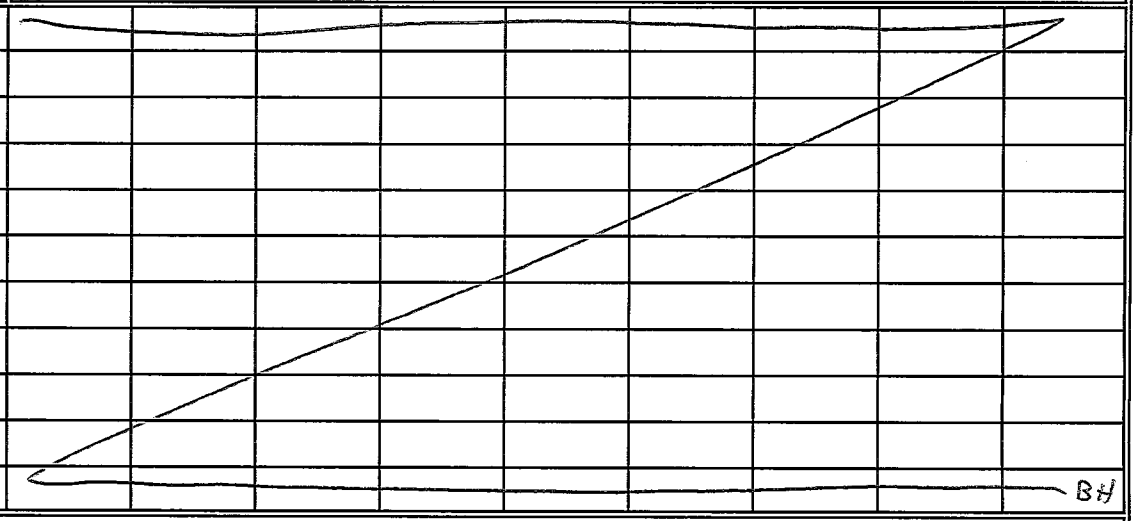
Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 48°, partly cloudy

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1256
Depth to Ground water (ft btoc)	—
Total Groundwater Purged(gallons, liters, other)	—
Purge Rate (gpm, ft^3/min, ml/min, other)	—
pH	7.36
Conductivity (mS/cm)	0.184
Turbidity (NTU)	71.78
Disssolved Oxygen (mg/L)	8.10
Temperature (°C)	12.8
ORP/eH (mV)	131.0
Color of Purged Water (gray, brown, red, clear)	Yellowish



Sample Identification: 2105-029

Time Sampled: 1256

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	3
___ Total Chromium	___
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	PZ-39
Well Diameter (inches)	2"
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	91.2

Site Location: Boomsnub ~~(Fall 2014)~~ Date: 7-3-21

Project Number: ~~1449545 2014 5~~ Personnel: RR/SK

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Cloudy 95°

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1030	1035	1040	1045	1050					
Depth to Ground water (ft btoc)	16.22	16.24	16.27	16.23	16.23					
Total Groundwater Purged(gallons, liters, other)					8.					
Purge Rate (gpm, ft^3/min, ml/min, other)	300	300	300	300	300					
pH	7.52	7.69	7.72	7.74	7.74					
Conductivity (mS/cm)	.253	.256	.259	.259	.258					
Turbidity (NTU)	95.78	34.61	19.22	12.10	8.63					
Disssolved Oxygen (mg/L)	1.46	1.05	.97	.92	.90					
Temperature (°C)	13.3	13.4	13.5	13.6	13.6					
ORP/eH (mV)	361.4	353.7	344.1	336.8	331.1					
Color of Purged Water (gray, brown, red, clear)	Cloudy	Clear	Clear	Clear	Clear					

Sample Identification: ZVGS-021

Time Sampled: 1050

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	8
✓ Total Chromium	
✓ Other	

Comments:

Spring 2021
Groundwater Purge and Sampling Forms

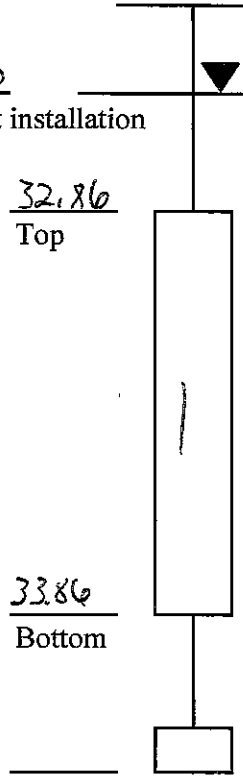
Passive Diffusion Bag Sampling Form

Well Identification: AMW-1A

Depth (BTOC)

30.30 DTW at installation

29.04 DTW at sampling



32.86 Top

33.86 Bottom

Weight

34.86 Well TD

Site Location: Boomsnub

Project Number: 161123

Well Diameter:

PDB Installation Date: 2/2/21 Time: 0955

Sample Information

Sample No: ~~4/20/21 BH~~ 2116-015

Sample Date: 4/20/21 Time: 1018

Sampling Personnel: RR

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

ORP = 8.18 mV

DO = 39.8 mg/L

Well Condition at Sampling

Well Monument Locked and in Good Condition? N

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: NA

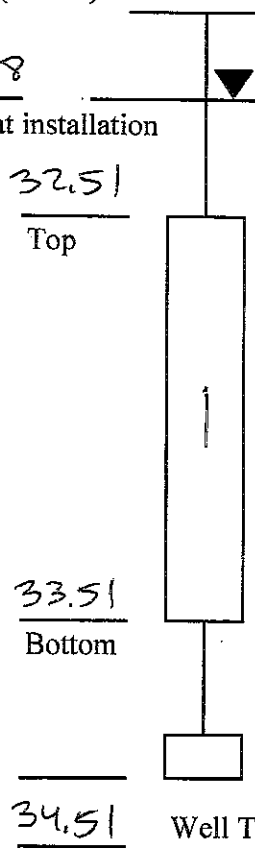
Passive Diffusion Bag Sampling Form

Well Identification: AMW-2A

Depth (BTOC)

30.28 — DTW at installation

29.24 — DTW at sampling



Site Location: Boomsnub

Project Number: 1611303

Well Diameter: 2

PDB Installation Date: 2/1/21 Time: 1033

Sample Information

Sample No: 2116-11

Sample Date: 4/19/2021 Time: 13:45

Sampling Personnel: ARR

Analyses: 8260c

Biofilm Present (Y/N): N DO 6.52

New PDB Deployed (Y/N): Y ORP 60.1

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: NA

Ground Water Purge and Sampling Form

Well Identification	AMW-12A
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 4/21/21

Project Number: 1611303 Personnel: RR, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 74° Sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1401	1406	1411	1416	1421	1426	1431	1436		
Depth to Ground water (ft btoc)	28.77	28.77	28.77	28.77	28.77	28.77	28.77	Collect		
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0	5.0	6.0	Sample		
Purge Rate (gpm, ft^3/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2	0.2	0.2			
pH		6.41	6.40	6.40	6.41	6.40	6.39			
Conductivity (mS/cm)		0.184	0.183	0.181	0.177	0.170	0.166			
Turbidity (NTU)		9.24	7.60	7.36	6.48	5.79	5.73			
Disssolved Oxygen (mg/L)		3.97	4.24	4.45	4.57	4.82	5.01			
Temperature (°C)		16.3	16.7	17.0	17.2	17.2	17.3			
ORP/eH (mV)		71.6	91.4	101.1	108.2	114.5	121.3			
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear			

Sample Identification: 216-032

Time Sampled: 1436

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	3
___ Total Chromium	___
✓ Other	13

Comments: NA

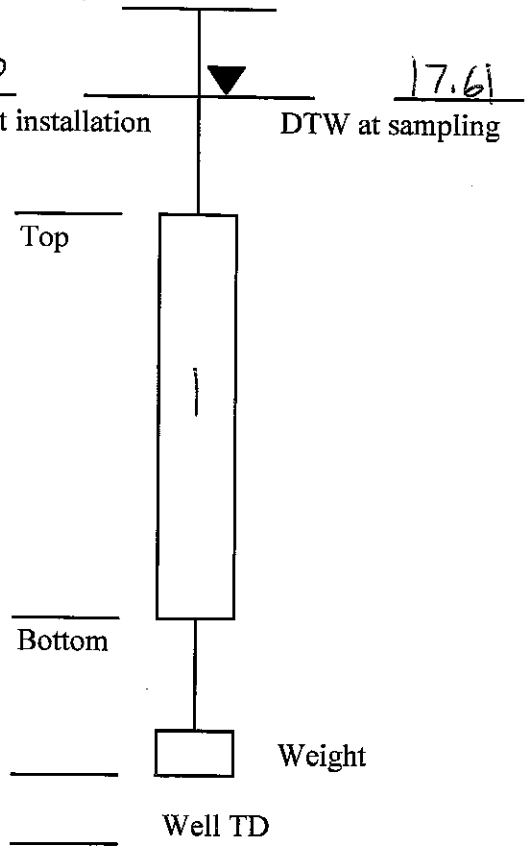
Passive Diffusion Bag Sampling Form

Well Identification: AMW-16

Depth (BTOC)

20.70 — DTW at installation

17.61 — DTW at sampling



Site Location: Boomsnub

Project Number: 1611323

Well Diameter:

PDB Installation Date: 10/19/20 Time: 1058

Sample Information

Sample No: 2116-006

Sample Date: 4/19/2021 Time: 1158

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: Under field turf, small cracked edge on plug

Passive Diffusion Bag Sampling Form

Well Identification: AMW-17

Depth (BTOC)

12.92 — DTW at installation

9.73 — DTW at sampling

Top

1

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 10/19/20 Time: 1139

Sample Information

Sample No: 2116-010

Sample Date: 4/19/2021 Time: 1300

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: NA

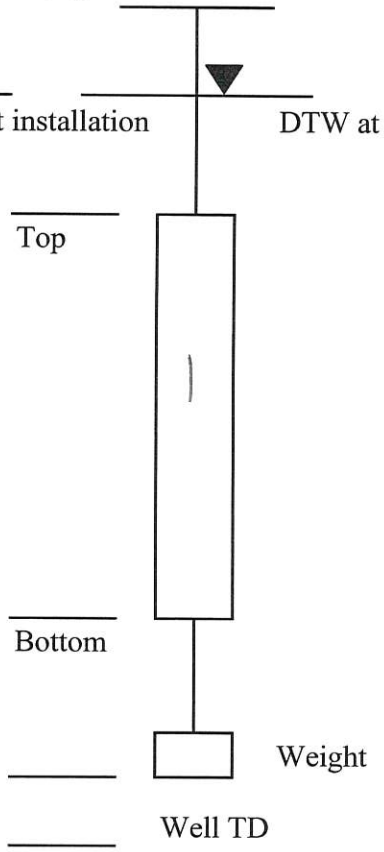
Passive Diffusion Bag Sampling Form

Well Identification: AMW-18

Depth (BTOC)

30.16 — DTW at installation

26.99 — DTW at sampling



Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 10/19/20 Time: 1502

Sample Information

Sample No: 2116-008

Sample Date: 4/19/2021 Time: 1228

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: NA

Passive Diffusion Bag Sampling Form

Well Identification: AMW-53A

Depth (BTOC)

27.67 — DTW at installation

26.67 — DTW at sampling

30.63 — Top

1

31.63 — Bottom

Weight

32.63 — Well TD

Site Location: Boomsnub

Project Number: 161303

Well Diameter:

PDB Installation Date: 2/1/21 Time: 1636

Sample Information

Sample No: 2116-12

Sample Date: 4/19/21 Time: 14:10

Sampling Personnel: RRL

Analyses: 8260c

Biofilm Present (Y/N): N DO 6.60

New PDB Deployed (Y/N): Y ORP 129.0

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: NA

Ground Water Purge and Sampling Form

Well Identification	AMW-59
Well Diameter (inches)	
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Ecdl. 2019)~~ Date: 4/20/21

Project Number: 1611303.004 ~~1524058~~ Personnel: AAR

Purge Method: X Low Flow ___Conventional ___None

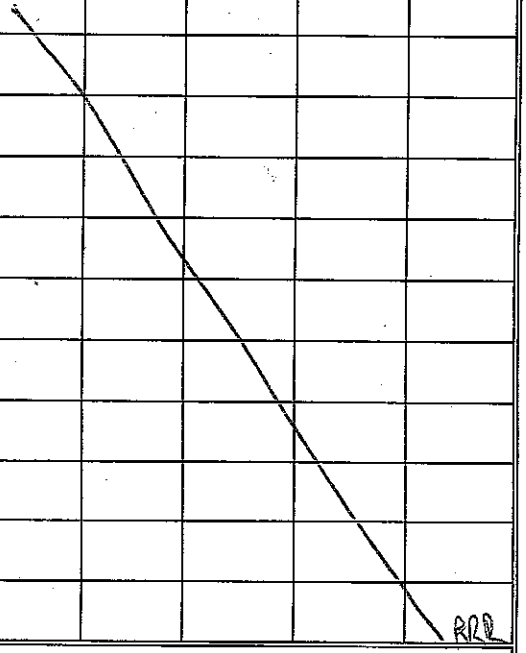
Purge Equipment: ___Extraction Well X Redi-flo Pump (Ded) ___None

Sampling Equipment: ___Extraction Well X Redi-flo Pump ___Passive Diffusion Bag

Weather Conditions: Sunny 61

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	11:38	11:55	12:05	12:10	12:15	12:20	12:25	
Depth to Ground water (ft btoc)	18.58	18.63	18.62	18.62	18.62	18.62	18.62	
Total Groundwater Purged (gallons, liters)								
Purge Rate (gpm, ft^3/min, ml/min)	250	250	250	250	250	250	250	
pH +/- 0.1		6.67	6.67	6.70	6.71	6.74	6.75	
Conductivity (mS/cm) +/- 3%		0.821	0.821	0.803	0.791	0.776	0.766	
Turbidity (NTU) +/- 10%		26.80	61.50	84.55	131.60	153.8	212.50	
Disssolved Oxygen (mg/L) +/- 0.3 mg/l		0.37	0.20	0.10	0.04	0.0	-0.01	
Temperature (°C) +/- 10%		15.1	15.3	14.8	14.8	14.6	14.8	
ORP/eH (mV) +/- 10 mV		-137.3	-141.9	-144.9	-146.3	-147.4	-148.9	
Color of Purged Water (gray, brown, red, clear)		gray	gray	gray	gray	grey	grey	



Sample Identification: 2116-17

Time Sampled: 12:30

Duplicate 2116-18 12:45

Purge water disposed To: Boomsnub

# of bottles 13

✓ VOCs by 8260C

✓ Total Chromium by 200.7

___ Other:

Comments:

Passive Diffusion Bag Sampling Form

Well Identification: AMW-64

Depth (BTOC)

19.32 — DTW at installation

16.21 — DTW at sampling

Top

1

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 10/19/20 Time: 1124

Sample Information

Sample No: 2116-009

Sample Date: 4/19/2021 Time: 1243

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

~~ORP~~ DO - HH 4/19/21

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: x1 bolt missing

Passive Diffusion Bag Sampling Form

Well Identification: CPU-14

Depth (BTOC)

11.17 — DTW at installation

8.00 — DTW at sampling

Top

1

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 10/19/20 Time: 1159

Sample Information

Sample No: 2116-013

Sample Date: 4/19/2021 Time: 1356

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: wasp nest on lid, casing plug had white slime on inside top

Passive Diffusion Bag Sampling Form

Well Identification: MW-14

Depth (BTOC)

32.00 DTW at installation

31.18 DTW at sampling

34.55 Top

35.55 Bottom

Weight

38.55 Well TD

Site Location: Boomsnub

Project Number: 161303

Well Diameter:

PDB Installation Date: 3/1/21 Time: 1059

Sample Information

Sample No: 2116-001

Sample Date: 4/9/2021 Time: 0923

Sampling Personnel: HH BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

ORP= 195.8 mV

DO= 3.33 mg/L

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: Black product on bag

Ground Water Purge and Sampling Form

Well Identification	MW-3A
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Spring 2021 Date: 4/21/2021

Project Number: 1611303 Personnel: HH, SS

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny, 69°F wind 7mph W

1306 Begin Purge

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1258	1311	1316	1321	1326	1331	1336	Stabilized	
Depth to Ground water (ft btoc)	26.44	26.44	26.44	26.44	26.44	26.44	26.44		
Total Groundwater Purged(gallons, liters, other)		1.00	2.00	3.00	4.00	5.00	6.00		
Purge Rate (gpm, ft³/min, ml/min, other)		200	200	200	200	200	200		
pH ±.2		6.31	6.18	6.16	6.25	6.13	6.13		
Conductivity (mS/cm) ± 10%		0.144	0.145	0.144	0.144	0.143	0.143		
Turbidity (NTU) <20 or ±10%		11.73	8.91	10.97	12.75	17.45	13.06		
Disssolved Oxygen (mg/L) ±.1 or 10%		8.65	8.57	8.30	7.92	8.06	7.93		
Temperature (°C) ±10%		16.6	19.4	19.6	21.1	22.4	22.3		
ORP/eH (mV) ±10		55.7	78.2	87.7	91.7	93.5	99.0		
Color of Purged Water (gray, brown, red, clear)		clear	—	—	—	—			

HH 4/21/21

Sample Identification: 2116-031

Time Sampled: 1339

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	1
___ Other	___

Comments: very rusted lid, hard to close hinge is broken off

Ground Water Purge and Sampling Form

Well Identification	MW-4A
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Spring 2021 Date: 4/21/2021

Project Number: 1611303 Personnel: HH SS

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 74°F, wind 7mph E sunny

Begin Purge 1402 Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1348	1407	1412	1417	1422	1427	1432	Stabilized
Depth to Ground water (ft btoc)	26.64	26.64	26.64	26.64	26.64	26.64	26.64	
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	
Purge Rate (gpm, ft^3/min, ~~ml/min~~, other)		300	300	300	300	300	300	
pH		6.32	6.27	6.26	6.25	6.26	6.26	HH 4/21/2021
Conductivity (mS/cm)		0.163	0.164	0.163	0.163	0.164	0.165	
Turbidity (NTU)		19.85	19.52	19.74	19.16	16.44	14.66	
Disssolved Oxygen (mg/L)		7.32	7.30	7.32	7.35	7.36	7.34	
Temperature (°C)		17.6	18.3	18.5	18.5	18.6	18.7	
ORP/eH (mV)		65.2	78.6	87.5	94.6	99.7	~~13~~ 103.3	
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	

Sample Identification: 2116-033

Time Sampled: 1437

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	1
___ Other	___

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-4B
Well Diameter (inches)	2in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Spring 2021 Date: 4/21/2021

Project Number: 1611303 Personnel: HH, SS

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: 75°F, wind NW 8mph

1502 Begin Purge

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1455	1507	1512	1517	STABILIZED
Depth to Ground water (ft btoc)	26.60	27.00	27.00	27.00	
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	
pH		6.35	6.34	6.33	HH 4/21/2021
Conductivity (mS/cm)		0.128	0.128	0.128	
Turbidity (NTU) ±10 <20		14.23	8.83	8.77	
Disssolved Oxygen (mg/L) ±0.1		8.95	9.01	9.00	
Temperature (°C) ±10%		16.8	18.0	18.2	
ORP/eH (mV) ±10		89.3	94.2	95.8	
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	

Sample Identification: 2116-035

Time Sampled: 1524

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	
✓ Total Chromium	1
___ Other	

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-4C	Site Location: Boomsnub	Date: 4/21/2021
Well Diameter (inches)	2in	Project Number: 1611303	Personnel: SS RR
Well Monument Locked and Good Condition?	Y	Purge Method: ✓ Low Flow ___ Conventional ___ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag	
PID Reading in Well (ppm)	—	Weather Conditions:	
Well Total Depth (ft btoc)		begin purge @ 1542	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1536	1547	1552	1557	1602	1607	Stabilized			
Depth to Ground water (ft btoc)	26.45	27.41	27.41	27.41	27.41	27.41				
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5				
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300				
pH		6.43	6.41	6.40	6.40	6.40				
Conductivity (mS/cm)		0.185	0.185	0.185	0.185	0.185				
Turbidity (NTU)		12.55	14.69	11.51	10.20	9.48				
Disssolved Oxygen (mg/L)		8.29	8.29	8.25	8.24	8.25				
Temperature (°C)		15.8	15.8	15.8	15.8	15.6				
ORP/eH (mV)		135.0	121.4	106.2	101.8	100.9				
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear				

Sample Identification: 2116-036	Analysis	# of Bottles	Comments:
Time Sampled: 1608	___ VOCs by 8260C		
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other		

Ground Water Purge and Sampling Form

Well Identification	MW-6A	Site Location: Boomsnub Spring 2021	Date: 4/20/21
Well Diameter (inches)	4	Project Number: 1611303	Personnel: HH, BH
Well Monument Locked and Good Condition?	Y	Purge Method: ✓ Low Flow ___ Conventional ___ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___ Extraction Well ___ Redi-flo Pump (Ded) ✓ Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___ Extraction Well ___ Redi-flo Pump ___ Diffusion Bag Submers. 64	
PID Reading in Well (ppm)	—	Weather Conditions: Sunny 74 wind N 2mph	
Well Total Depth (ft btoc)		1540 Begin Purge	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	HH 4/20/21 25.(53)	1545	1550	1555	1600	STABILIZED				
Depth to Ground water (ft btoc)	25.29	25.29	25.29	25.29	25.29					
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0					
Purge Rate (gpm, ft^3/min, ml/min, other)		0.3	0.3	0.3	0.3					
pH		5.91	5.90	5.89	5.89					
Conductivity (mS/cm)		0.125	0.124	0.123	0.123					
Turbidity (NTU)		4.97	5.47	6.43	7.88					
Disssolved Oxygen (mg/L)		5.71	5.64	5.63	5.62					
Temperature (°C)		17.8	18.3	18.6	18.6					
ORP/eH (mV)		165.0	156.3	154.2	153.1					
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear					

Sample Identification: 2116-021

Time Sampled: 1606

Analysis	# of Bottles
___ VOCs by 8260C	
✓ Total Chromium	1
___ Other	

Comments:

Purge water disposed To: Boomsnub

\12040.77\2006\0013\Field Forms\purgesampleform.xls

Ground Water Purge and Sampling Form

Well Identification MW-6B		Site Location: Boomsnub				Date: 4/20/21				
Well Diameter (inches)	4	Project Number: 1611303				Personnel: RRR				
Well Monument Locked and Good Condition?	Y	Purge Method: X Low Flow ___Conventional ___None								
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___Extraction Well X Redi-flo Pump (Ded) ___Other								
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well X Redi-flo Pump ___Diffusion Bag								
PID Reading in Well (ppm)	NA	Weather Conditions: Sunny 72								
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons								
Time	1531	15:45	15:50	15:55	16:00					
Depth to Ground water (ft btoc)	20.92	20.96	20.98	20.98	20.98					
Total Groundwater Purged(gallons, liters, other)										
Purge Rate (gpm, ft^3/min, ml/min, other)		300	300	300	300					
pH		6.47	6.35	6.29	6.29					
Conductivity (mS/cm)		0.151	0.148	0.145	0.144					
Turbidity (NTU)		45.60	26.20	20.85	16.15					
Disssolved Oxygen (mg/L)		7.71	7.62	7.51	7.50					
Temperature (°C)		14.7	14.6	14.6	14.6					
ORP/eH (mV)		50.2	53.3	61.0	61.6					
Color of Purged Water (gray, brown, red, clear)	Brown									RRR

Sample Identification: 2116-022	Analysis	# of Bottles	Comments:
Time Sampled: 1608	___ VOCs by 8260C	___	
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other	___	

Ground Water Purge and Sampling Form

Well Identification	MW 4D
Well Diameter (inches)	
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 11/21/11

Project Number: 1611303 Personnel: AR, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1501	1506	1511	1516	1521	1526					
Depth to Ground water (ft btoc)	22.42	22.42	22.42	22.42	22.42	Collect					
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0	Sample					
Purge Rate (gpm, ft^3/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2						
pH		6.38	6.39	6.39	6.39						
Conductivity (mS/cm)		0.176	0.175	0.176	0.176						
Turbidity (NTU)		22.32	9.48	7.35	5.13						
Disssolved Oxygen (mg/L)		7.69	8.04	8.13	8.21						
Temperature (°C)		14.9	14.7	14.8	14.8						
ORP/eH (mV)		148.9	158.3	161.4	164.1						
Color of Purged Water (gray, brown, red, clear)		clear	grey	grey	grey						BH

Sample Identification: ~~MW~~ BH 1116-0314

Time Sampled: ~~1116-0314~~ BH 1526

Purge water disposed To: Boomsnub

Analysis	# of Bottles
___ VOCs by 8260C	___
✓ Total Chromium	1
___ Other	

Comments: NA

Passive Diffusion Bag Sampling Form

Well Identification: MW-103

Depth (BTOC)

DTW at installation

20.38 DTW at sampling

Top

1

Bottom

Weight

Well TD

Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 4/5/21 Time: 1030

Sample Information

Sample No: 2116-002

Sample Date: 4/19/2021 Time: 0955

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: N/A

Ground Water Purge and Sampling Form

Well Identification	MW-14C										
Well Diameter (inches)	4in										
Well Monument Locked and Good Condition?	Y										
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D										
Well Casing Plug Locked and Good Condition?	Y										
PID Reading in Well (ppm)	—										
Well Total Depth (ft btoc)											
Time	1113	1137 Begin Purge	1142	1147	1152	1157					
Depth to Ground water (ft btoc)	18.64	18.82	18.82	18.82	18.82	18.82					
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0						
Purge Rate (gpm, ft^3/min, ml/min, other)		0.3	0.3	0.3	0.3						
pH		6.35	6.30	6.29	6.29						
Conductivity (mS/cm)		0.224	0.223	0.223	0.222						
Turbidity (NTU)	<20	6.57	5.76	5.28	4.31						
Disssolved Oxygen (mg/L)	±0.1	0.20	0.07	0.05	0.13						
Temperature (°C)		15.3	15.5	15.8	15.8						
ORP/eH (mV)	±10	97.4	98.1	96.6	98.2						
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear						

Site Location: Boomsnub Spring 2021 Date: 4/20/2021

Project Number: 1611303 Personnel: HH, BH

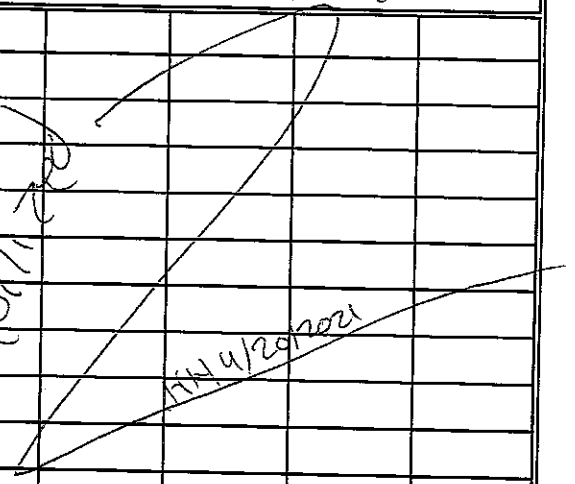
Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: HH ~~WH~~ ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ~~WH~~ ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny, 70°F, wind N 7 MPH

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons



Sample Identification: 2116-016

Time Sampled: 1159

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	6
___ Total Chromium	
✓ Other	7

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-14E
Well Diameter (inches)	4in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 4/20/21

Project Number: 1611303 Personnel: Brooke Haines

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ~~✓~~ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: sunny 70°F

1231 Begin Purge

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1221	1236	1241	1246	1251	1256	1301	1306			
Depth to Ground water (ft btoc)	16.88	16.88	16.88	16.88	16.88	16.88	16.88	16.88			
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5	9.0	10.5			
Purge Rate (gpm, ft³/min, ml/min, other)		0.3	0.3	0.3	0.3	0.3	0.3	0.3			
pH		6.60	6.60	6.60	6.60	6.60	6.60	6.60			
Conductivity (mS/cm)		0.235	0.234	0.234	0.234	0.233	0.233	0.233			
Turbidity (NTU)		62.88	23.37	10.80	7.34	6.13	4.23	2.38			
Disssolved Oxygen (mg/L)		4.93	5.08	5.22	5.31	5.31	5.29	5.29			
Temperature (°C)		14.6	14.8	14.8	14.7	14.8	14.8	14.8			
ORP/eH (mV)		218.4	188.9	167.9	136.0	125.5	119.8	117.1			
Color of Purged Water (gray, brown, red, clear)		clear	clear	brown	brown	brown	clear	clear			

Sample Identification: 2116-014

Time Sampled: 1311

Purge water disposed To: Boomsnub

Analysis

✓ VOCs by 8260C — 9 # of Bottles

✓ Total Chromium — 3 # of Bottles

___ Other

Comments:

Ground Water Purge and Sampling Form

Well Identification	MW-18D	Site Location: Boomsnub (~~Fall 2019~~)	Date: 4/20/21
Well Diameter (inches)	4	Project Number: 1611303.004 (~~1524058~~)	Personnel: RRA
Well Monument Locked and Good Condition?	Y	Purge Method: X Low Flow ___Conventional ___None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ___Extraction Well X Redi-flo Pump (Ded) ___None	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___Extraction Well X Redi-flo Pump ___Passive Diffusion Bag	
PID Reading in Well (ppm)	NA	Weather Conditions: Sunny 70	
Well Total Depth (ft btoc)		Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time		13:35	13:45	13:50	13:55	14:00	14:05	14:10					
Depth to Ground water (ft btoc)		9.62	9.68	9.68	9.66	9.68	9.68	9.68					
Total Groundwater Purged (gallons, (liters))			1.5	3.0	4.5	6.0	7.5	9.0					
Purge Rate (gpm, ft^3/min, ml/min)		300	300	300	300	300	300	300					
pH	+/- 0.1		6.45	6.40	6.37	6.35	6.34	6.35					
Conductivity (mS/cm)	+/- 3%		0.198	0.190	0.186	0.188	0.189	0.190					
Turbidity (NTU)	+/- 10%		230.6	137.45	45.7	28.52	20.03	17.89					
Disssolved Oxygen (mg/L)	+/- 0.3 mg/l		0.04	-0.01	-0.04	-0.06	-0.06	-0.07					
Temperature (°C)	+/- 10%		13.6	13.5	13.5	13.5	13.4	13.5					
ORP/eH (mV)	+/- 10 mV		-25.0	-23.4	-12.0	1.8	2.0	1.9					
Color of Purged Water (gray, brown, red, clear)		gray	gray	gray	lt gray	Tan	clear	clear					RPD

Sample Identification: 2116-19

Time Sampled: 14:20

Purge water disposed To: Boomsnub

13 # of bottles

X VOCs by 8260C

X Total Chromium by 200.7

X Other:

Comments:

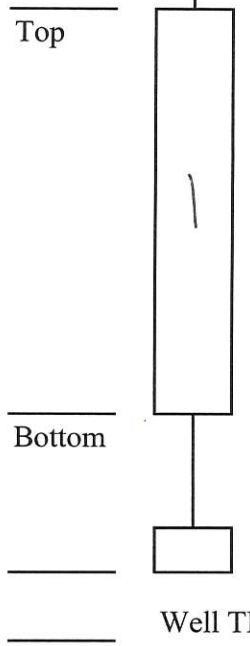
Passive Diffusion Bag Sampling Form

Well Identification: MW-18E

Depth (BTOC) 10.17

10.45

DTW at installation — DTW at sampling



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: 3/29/21 Time:

Sample Information

Sample No: 2116-003

Sample Date: 4/19/2021 Time: 1010

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : D

Well Casing Plug Locked and in Good Condition? Y

Comments: N/A

Ground Water Purge and Sampling Form

Well Identification	MW-19D
Well Diameter (inches)	4
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	
Well Total Depth (ft btoc)	9

Site Location: Boomsnub Date: 4/21/21

Project Number: 1611303 Personnel: RR, BH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions:

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1139	1144	1149	1154	1159	1204	1209	1214		
Depth to Ground water (ft btoc)	4.32	4.32	4.32	4.32	4.32	4.32	4.32	collect		
Total Groundwater Purged(gallons, liters, other)	—	1.0	2.0	3.0	4.0	5.0	6.0	Sample		
Purge Rate (gpm, ft^3/min, ml/min, other)	0.2	0.2	0.2	0.2	0.2	0.2	0.2			
pH		7.16	7.01	6.95	6.92	6.90	6.89			
Conductivity (mS/cm)		0.608	0.533	0.513	0.511	0.513	0.512			
Turbidity (NTU)		22.10	18.09	17.66	12.48	11.33	8.76			
Disssolved Oxygen (mg/L)		0.40	0.18	0.09	0.04	0.02	0.01			
Temperature (°C)		13.6	13.7	13.6	13.6	13.6	13.6			
ORP/eH (mV)		-118.6	-72.3	-56.7	-52.0	-45.8	-40.01			
Color of Purged Water (gray, brown, red, clear)		clear	clear	clear	clear	clear	clear	✓		

Sample Identification: 2116-030 MS/MSD

Time Sampled: 1214

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓ VOCs by 8260C	9
✓ Total Chromium	3
✓ Other	27

39

Comments: MS/MSD

Ground Water Purge and Sampling Form

Well Identification	MW-20D
Well Diameter (inches)	4in
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	Y
PID Reading in Well (ppm)	NA
Well Total Depth (ft btoc)	

Site Location: Boomsnub Spring 2021 Date: 4/21/2021

Project Number: 1611303 Personnel: AH

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other

Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag

Weather Conditions: Sunny, 56°F, wind W 4mph

1007 Begin Purge

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	0950	1012	1017	1022	1027	1032	STABILIZED				
Depth to Ground water (ft btoc)	20.62	20.74	20.74	20.74	20.74	20.74					
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5					
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300					
pH ±.2		6.84	6.58	6.51	6.50	6.50					
Conductivity (mS/cm)		0.367	0.308	0.293	0.287	0.286					
Turbidity (NTU) ±10% if >20		35.81	22.52	21.26	20.67	20.71		MW 4/24/2021			
Disssolved Oxygen (mg/L) ±0.1		0.71	0.50	0.37	0.30	0.25					
Temperature (°C)		14.2	14.3	14.4	14.4	14.4					
ORP/eH (mV) ±10	4/21 66.7	~~35.81~~	91.7	109.1	110.3	111.3					
Color of Purged Water (gray, brown, red, clear)	brown cloudy	brown cloudy	clear	clear	clear	clear					

Sample Identification: 2116-025 1039

Time Sampled: ~~1027~~ 2116-025A MW sample time = 1049

Dup Sample for VOC & TCR Total bottles = 4

Purge water disposed To: Boomsnub

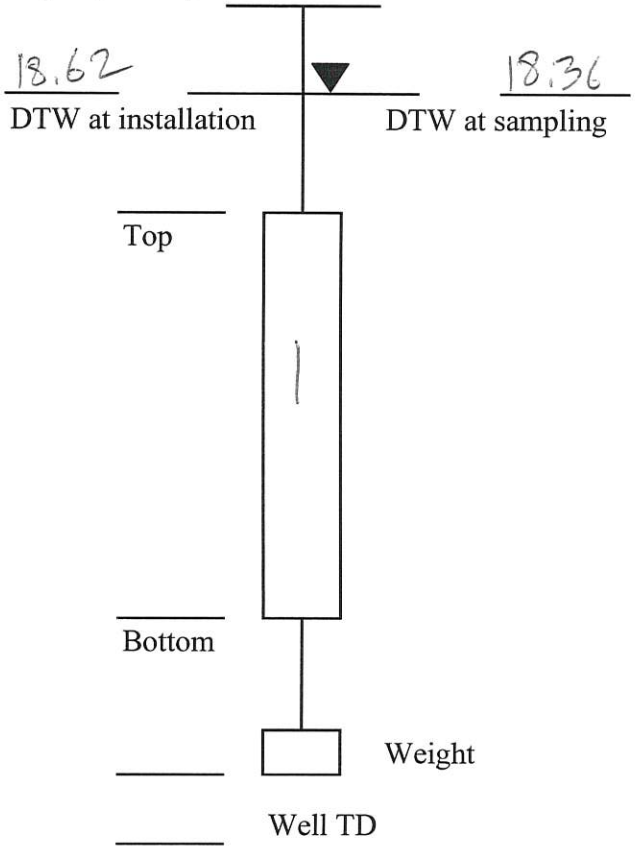
Analysis	# of Bottles
✓ VOCs by 8260C	3
✓ Total Chromium	2
✓ Other	

Comments:

Passive Diffusion Bag Sampling Form

Well Identification: MW-21D

Depth (BTOC)



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: 3/29/2021 Time:

Sample Information

Sample No: 2116-004

Sample Date: 4/19/2021 Time: 1113

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: NA

Ground Water Purge and Sampling Form

Well Identification	MW-220	Site Location: Boomsnub	Date: 4/21/2021
Well Diameter (inches)	4in	Project Number: 1611303	Personnel: HH, SS
Well Monument Locked and Good Condition?	Y	Purge Method: ✓ Low Flow ___ Conventional ___ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Diffusion Bag	
PID Reading in Well (ppm)	—	Weather Conditions: 63°F, Sunny, Wind SW 4mph	
Well Total Depth (ft btoc)		1122 Begin Purge	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1110	1127	1132	1137	1142	1147	STABILIZED			
Depth to Ground water (ft btoc)	19.92	20.08	20.08	20.08	20.08	20.03				
Total Groundwater Purged(gallons, liters, other)		1.5	3.0	4.5	6.0	7.5				
Purge Rate (gpm, ft³/min, ml/min, other)		300	300	300	300	300		HH 4/21/2021		
pH		7.20	7.21	7.17	7.15	7.14				
Conductivity (mS/cm)		0.378	0.387	0.375	0.371	0.368				
Turbidity (NTU) <20 or ±10%		22.75	22.67	18.71	16.66	15.55				
Disssolved Oxygen (mg/L)		0.51	0.36	0.34	0.31	0.31				
Temperature (°C)		13.0	13.0	13.5	13.7	13.8				
ORP/eH (mV) ±10		-61.9	-91.1	-87.7	-84.7	-82.6				
Color of Purged Water (gray, brown, red, clear)	clear	clear	clear	clear	clear	clear				

Sample Identification: 2116-029	Analysis	# of Bottles	Comments:
Time Sampled: 1153	✓ VOCs by 8260C	3	
	✓ Total Chromium	1	
Purge water disposed To: Boomsnub	___ Other		

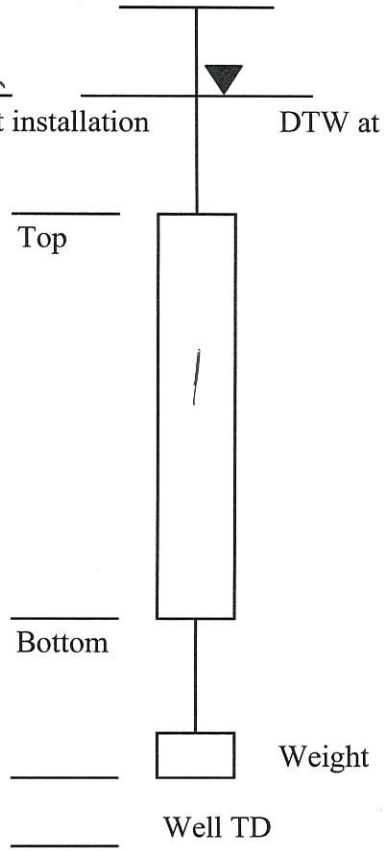
Passive Diffusion Bag Sampling Form

Well Identification: MW-23D

Depth (BTOC)

23.92 — DTW at installation

18.92 — DTW at sampling



Site Location: Boomsnub

Project Number: 1611303

Well Diameter:

PDB Installation Date: 10/19/20 Time: 1047

Sample Information

Sample No: 2116-005

Sample Date: 4/19/21 Time: 1140

Sampling Personnel: HH, BH

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? N

Comments: Missing x3 bolts

Ground Water Purge and Sampling Form

HH 4/19/21

Well Identification	& MW-33
Well Diameter (inches)	12
Well Monument Locked and Good Condition?	Y
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D
Well Casing Plug Locked and Good Condition?	N/A
PID Reading in Well (ppm)	N/A
Well Total Depth (ft btoc)	

Site Location: Boomsnub ~~(Fall 2019)~~ Spring 2021 (HH 4/19/21) Date: 4/19/2021

Project Number: ~~1524058~~ 161303 (HH 4/19/21) Personnel: HH, BH, RR

Purge Method: ✓ Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well ✓ Redi-flo Pump (Ded) ___ None

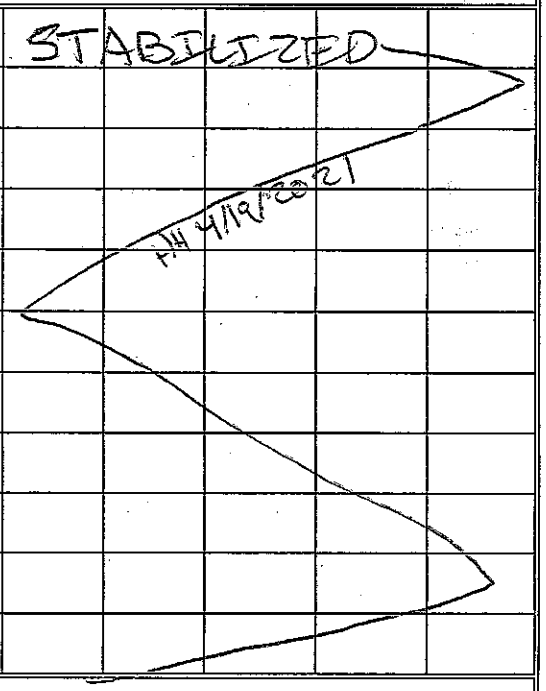
Sampling Equipment: ___ Extraction Well ✓ Redi-flo Pump ___ Passive Diffusion Bag

Weather Conditions: 71° F, partly cloudy, wind E 12 mph

1444 begin Purge

Water volume per ft: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1433	~~1444~~ 1449 (HH 4/19/21)	1454	1459	1504	1509	1514	STABILIZED	
Depth to Ground water (ft btoc)	131.89	132.1	132.1	132.1	132.1	132.1	132.1		
Total Groundwater Purged (gallons, liters)		1.5	3.0	4.5	6.0	7.5	9.0		
Purge Rate (gpm, ft³/min, ml/min)		.3 gpm	.3 gpm	.3 gpm	.3 gpm	.3 gpm	.3 gpm		
pH +/- 0.1		7.12	7.02	6.98	6.98	6.99	7.00		
Conductivity (mS/cm) +/- 3%		~~162.5~~ 0.162 mS/cm	0.152	0.150	0.149	0.149	0.149		
Turbidity (NTU) +/- 10%		9.49	5.34	4.54	6.50	7.00	8.50		
Disssolved Oxygen (mg/L) +/- 0.3 mg/l		7.02	6.85	6.82	6.79	6.76	6.74		
Temperature (°C) +/- 10%		13.9	13.9	14.3	15.1	15.1	15.2		
ORP/eH (mV) +/- 10 mV		133.3	122.8	111.0	101.0	95.5	93.9		
Color of Purged Water (gray, brown, red, clear)		~~cloudy~~ clear (HH 4/19/21)	clear	clear	clear	clear	clear		



Sample Identification: 212-014 (16 HH 4/20/21)

Time Sampled: 1517

Purge water disposed To: Boomsnub

# of bottles	
3	VOCs by 8260C
—	Total Chromium by 200.7
___	Other:

Comments:

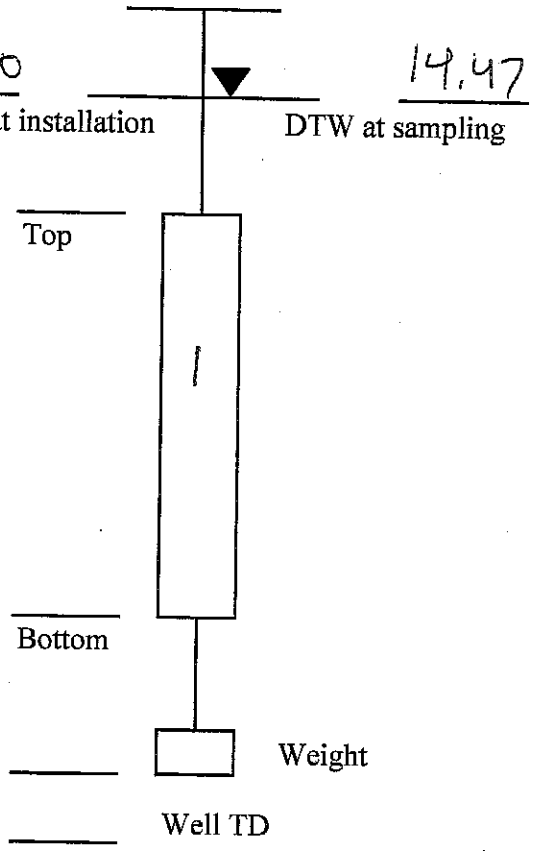
Passive Diffusion Bag Sampling Form

Well Identification: MW-38

Depth (BTOC)

14.20 — DTW at installation

14.47 — DTW at sampling



Site Location: Boomsnub

Project Number:

Well Diameter:

PDB Installation Date: 3/29/2021 Time:

Sample Information

Sample No: 2121-007 (16 HH 4/20/21)

Sample Date: 4/19/2021 Time: 1209

Sampling Personnel: H. Hajek, B. Haines

Analyses: VOC

Biofilm Present (Y/N): N

New PDB Deployed (Y/N): Y

Well Condition at Sampling

Well Monument Locked and in Good Condition? Y

Inside Well Head and Outside Well Casing (D = Dry, WAC = Water Above Casing, WBC=Water Below Casing) : WBC

Well Casing Plug Locked and in Good Condition? Y

Comments: N/A

Ground Water Purge and Sampling Form

Well Identification	PZ-39
Well Diameter (inches)	2
Well Monument Locked and Good Condition?	N
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC
Well Casing Plug Locked and Good Condition?	N
PID Reading in Well (ppm)	—
Well Total Depth (ft btoc)	

Site Location: Boomsnub Date: 4/21/21

Project Number: 1611303 Personnel: RR, BH

Purge Method: ___Low Flow ✓Conventional ___None

Purge Equipment: ___Extraction Well ___Redi-flo Pump (Ded) ✓Other

Sampling Equipment: ✓Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 56° sunny

Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1006	1017	1017	1022	1027	1032	1037	1042		
Depth to Ground water (ft btoc)	15.89	15.89	15.89	15.89	15.89	15.89	15.89	Collect		
Total Groundwater Purged(gallons, liters, other)			~~1.0~~ BH	2.0	3.0	4.0	5.0	sample		
Purge Rate (gpm, ft³/min, ml/min, other)			0.2	0.2	0.2	0.2	0.2			
pH			7.58	7.69	7.69	7.68	7.68			
Conductivity (mS/cm)			0.501	0.507	0.506	0.506	0.505			
Turbidity (NTU)			51.47	12.30	6.65	2.79	2.27			
Disssolved Oxygen (mg/L)			0.40	0.14	0.10	0.05	0.03			
Temperature (°C)			14.1	14.7	14.7	14.8	14.9			
ORP/eH (mV)			-85.1	-98.2	-97.3	-92.2	-90.5			
Color of Purged Water (gray, brown, red, clear)	↓		clear	clear	clear	clear	clear			

Sample Identification: 2116-026

Time Sampled: 1042

Dup 2116-028, sample time: 1047 x4 bottles

Purge water disposed To: Boomsnub

Analysis	# of Bottles
✓VOCs by 8260C	6
✓Total Chromium	2
✓Other	

Comments: NA