# Fall 2012 Semiannual Groundwater Sampling Report
# Boomsnub/Airco Superfund Site
# Hazel Dell, Washington

*Prepared for*

Linde LLC
575 Mountain Avenue
Murray Hill, New Jersey 07974

*Prepared by*

EA Engineering, Science, and Technology, Inc.
2200 Sixth Avenue, Suite 707
Seattle, Washington 98121

February 2013
REVISION: 0
Project No. 14495.05.2013.0011

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# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| Boomsnub | Boomsnub Corporation |
| CAS/ALS | Columbia Analytical Services/ALS Group |
| *cis*-1,2-DCE | *cis*-1,2-dichloroethene |
| CFC-11 | trichlorofluoromethane |
| CPU | Clark Public Utilities |
| 1,1-DCE | 1,1-dichloroethene |
| DO | dissolved oxygen |
| EA | EA Engineering, Science, and Technology, Inc. |
| EPA | U.S. Environmental Protection Agency |
| ft | feet |
| gpm | gallons per minute |
| IWS | in-well stripping |
| Linde | Linde LLC |
| MCL | maximum contaminant level |
| µg/L | micrograms per liter |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| MTCA | Model Toxics Control Act |
| NTU | Nephelometric Turbidity Unit |
| OU | operable unit |
| ORP | oxidation-reduction potential |
| PCE | tetrachloroethene |
| PDB | passive diffusion bag |
| QA | quality assurance |
| QASP | Quality Assurance and Sampling Plan |
| QC | quality control |
| ROD | Record of Decision |
| RPD | relative percent difference |

| | |
|---|---|
| SDG | sample delivery group |
| Site | Boomsnub/Airco Superfund Site |
| SVE | soil vapor extraction |
| 1,1,1-TCA | 1,1,1-trichloroethane |
| TCE | trichloroethene |
| TOPPS | Toe-of-Plume Pilot Study |
| VOC | volatile organic compound |

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# 1. INTRODUCTION

## 1.1 Background

This report presents the results of the Fall 2012 semiannual sampling event conducted at the Boomsnub/Airco Superfund Site (Site). The Site is located in Hazel Dell, Washington, just north of the city limits of Vancouver, Washington. A site location map is presented as Figure 1.

The Site includes two adjacent properties, the Linde LLC (Linde) facility and the former Boomsnub Corporation (Boomsnub) property. Linde was formerly known as The BOC Group, Inc. and Airco Gases. The Site includes impacted groundwater in the alluvial and Troutdale aquifers (Operable Unit [OU]-3). The Site extends approximately 4,000 feet (ft) in a west-northwest direction from the two properties. The primary compounds of concern at the Site are hexavalent chromium and trichloroethene (TCE). The chromium and TCE plumes at the Site originate on the Boomsnub and Linde properties, respectively. These two plumes collectively are referred to as the OU-3 Plume.

In 2008, an investigation identified a new TCE plume north of the OU-3 Plume, in the area around well AMW-18 (EA 2008). This plume is referred to as the Northern Plume. Additional investigation of the Northern Plume area was performed in May 2011 (EA 2011). The source of this plume is unknown, but it does not appear to be related to OU-3. The U.S. Environmental Protection Agency (EPA) is leading the effort to characterize and remediate the Northern Plume.

Linde assumed responsibility for Site operations and maintenance on 1 April 2002, pursuant to an Administrative Order on Consent signed by Linde and the EPA (Docket No. CERCLA 10-2002-0052). The responsibility continues with the entry of a Consent Decree (Docket No. CO7-5163 FDB) on 29 June 2007. EA Engineering, Science, and Technology, Inc. (EA) operates three systems at the Site for Linde: one system that extracts and treats groundwater containing chromium and volatile organic compounds (VOCs); an in-well stripping (IWS) system that treats the VOC source area (OU-2); and an infiltration gallery on the Linde property which is used for discharge of treated groundwater. Two other treatment systems recently operated at the Site. A soil vapor extraction (SVE) system was operated from 2004 to 2008 to treat the vadose zone soil in OU-2. This system was turned off in 2008 with EPA approval. The Toe-of-Plume Pilot Study (TOPPS), an *in-situ* treatment program, was performed successfully in 2006 to treat an area of recalcitrant contamination.

The Fall 2012 semiannual sampling event included collection of groundwater samples from selected wells at the site with analysis for VOCs and/or chromium. Figure 2 presents the locations of Site monitoring and extraction wells and identifies wells sampled during the Fall 2012 event.

## 1.2 Purpose and Scope

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

- Evaluating the progress of VOC remediation activities in the OU-2 area.
- Documenting the lateral and vertical extent of VOCs and chromium in groundwater.
- Monitoring changes in VOC and chromium concentrations in groundwater at monitoring and extraction wells across the Site.
- Evaluating groundwater flow patterns for the alluvial and Troutdale aquifers.

The following tasks were performed to accomplish these goals:

- Collected and 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 six sections and six appendices:

- Section 1 provides the project background and scope.
- Section 2 discusses field activities performed and samples collected.
- Section 3 provides a brief discussion of analytical results for environmental samples and groundwater elevation measurements.
- Section 4 presents information on data quality.
- Section 5 summarizes the findings and presents recommendations.
- Section 6 lists the references cited in this document.

Depth to groundwater measurements and calculated groundwater elevations are presented in Appendix A. Field groundwater purge and sampling forms are provided in Appendix B. Laboratory chain-of-custody documentation is provided in Appendix C. A summary of the analytical results is provided in Appendix D. A summary of the results of sampling of wells in the Northern Plume area is included in Appendix E. The data validation report is provided in Appendix F.

# 2. FIELD ACTIVITIES

## 2.1 Overview

The Site sampling schedule is presented in the Long-Term Monitoring Plan (EA 2007), with updates and revisions to the schedule provided in the 2011 Annual Status Report (EA 2013). Wells included in the Fall 2012 sampling event were those on semiannual, annual, and biennial sampling schedules. Sampling activities were conducted in general accordance with the EPA-approved Quality Assurance and Sampling Plan (QASP; EA 2004) and the EPA-approved QASP Addendum for the Fall 2012 Semiannual Sampling Event (EA 2012). These documents are referred to as the Reference QASP and the QASP Fall Addendum, respectively. Groundwater samples were analyzed by Columbia Analytical Services/ALS Group (CAS/ALS) in Kelso, Washington.

The Fall 2012 groundwater sampling activities were conducted in the field during the period from 15 October through 24 October 2012. Field personnel present during all or a portion of the sampling event and their responsibilities are listed in the table below.

| EA Personnel | Responsibility |
|---|---|
| Mark Blinstrub | Field Sampling Team Leader/Health and Safety Supervisor |
| Kristina Beaulieu | Field Sampling Team Member |
| Rick Read | Field Sampling Team Member |
| Sarah Titcomb | Field Sampling Team Member |

The Fall 2012 semiannual sampling event included collection of groundwater samples from 74 wells. Samples from TCE Source (OU-2) wells were analyzed for VOCs. Samples from OU-3 wells were analyzed for VOCs and/or total chromium. Several wells in the Northern Plume area also were sampled for VOCs for use in evaluating potential impacts to site remediation. Additional samples were collected for quality assurance/quality control (QA/QC), including field duplicates, equipment rinsate blanks, trip blanks, and matrix spike/matrix spike duplicates (MS/MSDs).

## 2.2 Field Methods

Approved monitoring and sampling methods were used in the field. The methods and procedures are described in the Reference QASP (EA 2004).

### *2.2.1 Water Level Gauging Program*

A round of water level measurements was obtained from accessible monitoring and extraction wells during a 24-hour period. The water levels were measured to the nearest 0.01 ft relative to the top of the well casing using an electronic water level indicator. Water level measurements were collected while the extraction system was actively pumping to evaluate groundwater flow

across the site under drawdown conditions. A summary of the water level data is provided in Appendix A.

### *2.2.2 Extraction Well Sampling*

The following 16 active Site extraction wells were sampled during the Fall 2012 sampling event.

| | | | |
|---|---|---|---|
| PW-1B | CPU-13 | MW-19D | MW-25D |
| MW-6B | MW-14C | MW-20D | MW-26D |
| MW-10B | MW-14E | MW-21D | AMW-27 |
| MW-10C | MW-18D | MW-22D | MW-49 |

Extraction wells are equipped with 3-inch diameter submersible pumps with operating flow rates ranging from 0.5 to 17 gallons per minute (gpm). Samples from the extraction wells were collected from sampling spigots located at the wellheads. At actively pumping extraction wells, the spigots were opened and the flow rate was adjusted to less than 0.5 liter per minute prior to measuring field water quality parameters and collecting samples. Inactive extraction wells were turned on and pumped for a minimum of 20 minutes before recording water quality parameter data and collecting samples. The field parameters measured consisted of pH, specific conductivity, temperature, dissolved oxygen (DO), turbidity, and oxidation-reduction potential (ORP). Groundwater purge and sampling forms are included in Appendix B. Samples collected were analyzed for VOCs and total chromium.

### *2.2.3 Monitoring Well Sampling*

Groundwater samples from monitoring wells were collected either by using low-flow purging and sampling techniques or by the use of passive diffusion bag (PDB) samplers.

#### *2.2.3.1 Low-Flow Sampling*

Samples requiring analysis for chromium and VOCs, or chromium only, were collected from Site monitoring wells using low-flow purging and sampling techniques. At each monitoring well location, water quality parameters (pH, specific conductivity, temperature, DO, turbidity, and ORP) were allowed to stabilize before sample collection, in accordance with the procedures outlined in the Reference QASP (EA 2004).

Electric submersible pumps were used to purge and sample the monitoring wells. Dedicated pumps have been installed in some, but not all, of the monitoring wells. Monitoring wells equipped with dedicated pumping systems are identified with an “M/D” on the table in Appendix A. Wells without dedicated pumps (identified with an “M” on the table) were sampled using a non-dedicated Grundfos™ submersible pump. This pump is decontaminated prior to each use following the decontamination procedures outlined in the Reference QASP (EA 2004). Groundwater purge and sampling forms are included in Appendix B.

*2.2.3.2 Passive Diffusion Bag Sampling*

Groundwater samples were collected from the OU-2 wells and selected OU-3 wells using PDB samplers. These samples were submitted for laboratory analysis of VOCs only. No biofilms were observed on any of the samplers. PDB sampling forms are included in Appendix B.

### *2.2.4 Private Well Sampling*

One private well was sampled during the Fall 2012 sampling event. A groundwater sample was collected from the Bennett well (Parcel No. 149147-000) and analyzed for VOCs and total chromium. The sample was collected from the spigot at the wellhead, prior to any residential treatment system. Water was purged from the well for approximately 40 minutes before sampling, in accordance with the procedures used by Clark Public Utilities (CPU). Water quality parameters (pH, specific conductivity, temperature, DO, ORP, and turbidity) were measured before filling the sample bottles. Water from this well is used for non-potable purposes. Potable water for the residence is supplied by CPU.

## 2.3 Sample Quantities, Analyses, and Handling

All laboratory analyses were conducted by CAS/ALS in Kelso, Washington. Copies of the chain-of-custody forms that accompanied the samples to CAS/ALS are included in Appendix C. The following samples were collected and submitted for laboratory analysis during the Fall 2012 sampling event:

- Forty-two groundwater samples, five field duplicate samples, and four MS/MSD samples were collected from extraction and monitoring wells, and one private well, and analyzed for total chromium (EPA Method 200.7).
- One groundwater sample was collected and analyzed for dissolved chromium (EPA Method 200.7) in addition to total chromium due to elevated sample turbidity.
- Seventy-three groundwater samples, eight field duplicate samples, and four MS/MSD samples were collected from extraction and monitoring wells, and one private well, and analyzed for VOCs (EPA Method 8260C).
- Three equipment rinsate samples were collected from the decontaminated Grundfos pump and analyzed for VOCs and total chromium.
- Seven trip blanks were transported with the coolers of samples and were analyzed for VOCs.

## 2.4 Problems Encountered and Resolution

The following is a summary of the problems encountered during the sampling event and their resolution.

- When the pump was placed into well CPU-10 it hit the bottom and caused turbidity issues. A sample was collected for dissolved chromium in addition to the sample collected for total chromium.

# 3. SUMMARY OF RESULTS

This section summarizes the analytical results for environmental samples and the groundwater elevation data. In the following discussion, chromium and TCE results are presented by aquifer (alluvial and Troutdale) and by well grouping. Concentrations of additional contaminants detected are also briefly discussed. Note that concentration trends observed in Site groundwater, by aquifer and well grouping, are presented in the Annual Status Reports, the most recent of which was prepared for 2011 (EA 2012).

The alluvial aquifer is divided geographically into the following well groupings: Upgradient wells, TCE Source wells, Proximal wells, Intermediate wells, Church of God wells, and Toe-of-Plume wells (including Sentinel and Other Toe wells). Well groupings are presented in Table 1 and shown on Figure 3.

Tables 2 through 5 present data for wells sampled during the Fall 2012 event. A summary of the analytical results for total chromium and selected VOCs is presented in Table 2. Wells with analytical results at or above the cleanup levels are presented in Table 3. Table 4 presents a summary of the chromium analytical results for each well sampled for chromium along with results for the previous three semiannual sampling events for comparison. Table 5 presents a summary of the TCE analytical results for each well sampled for TCE, along with results for the previous three semiannual sampling events for comparison purposes.

Contour maps for the chromium concentrations and the OU-3 TCE concentrations in the alluvial aquifer groundwater are shown on Figures 4 and 5, respectively. Analytical results for the samples collected during the Fall 2012 semiannual event are included in Appendix D.

## 3.1 Chromium Results and Distribution

As shown on Table 4, in 6 of 41 groundwater samples collected during the Fall 2012 event chromium was detected at a concentration above the Site-specific chromium cleanup level of 80 micrograms per liter (µg/L), as established in the Record of Decision (ROD) for the Site (EPA 2000). The following subsections summarize the chromium results by aquifer and well grouping.

### *3.1.1 Alluvial Aquifer*

Alluvial aquifer monitoring and extraction wells from the following well groupings were sampled for chromium during the Fall 2012 sampling event: Upgradient, TCE Source, Proximal, Intermediate, Church of God, and Toe of Plume.

#### *3.1.1.1 Upgradient Wells*

The Upgradient wells are located near the upgradient (eastern) Site boundary. Four wells in this area were sampled for chromium during the Fall 2012 event. Chromium was not detected above the cleanup level of 80 µg/L in any of the wells sampled.

#### *3.1.1.2 TCE Source Wells*

The TCE Source wells are located on the western half of the Linde property. Most of the wells in this group are part of the OU-2 monitoring program and are sampled for VOC's only. One well in this area was sampled for chromium during the Fall 2012 event; chromium was not detected above the cleanup level of 80 µg/L.

#### *3.1.1.3 Proximal Wells*

The Proximal wells are located west of the maintenance building (former machine shop) on the Boomsnub property and east of NE St. Johns Road. This group includes wells within the chromium source area. Eight wells in this group were sampled for chromium during the Fall 2012 sampling event, including the four active extraction wells (MW-6B, MW-10B, MW-10C, and PW-1B).

Chromium concentrations were below the 80 µg/L groundwater cleanup level in four of the eight wells sampled (Table 4). Chromium concentrations exceeded the cleanup level in groundwater samples from the following four wells: MW-2A (190 µg/L), MW-4A (362 µg/L), MW-4B (407 µg/L), and MW-10C (93.6 µg/L).

With the exception of well MW-2A, chromium concentrations decreased from the previous results in wells sampled in this area. Chromium concentrations in well MW-2A increased from 81.3 µg/L in Fall 2011 to 190 µg/L in Fall 2012. Well MW-2A, and other wells in the chromium source area, have historically had large fluctuations in chromium concentrations (EA 2013)

#### *3.1.1.4 Intermediate Wells*

The Intermediate wells are located west of NE St. Johns Road and north and south of NE 78$^{th}$ Street (Figure 3). Six wells in this group were sampled for chromium during the Fall 2012 sampling event. Chromium concentrations were below the 80 µg/L groundwater cleanup level in four of the six wells sampled (Table 4). Chromium concentrations exceeded the cleanup level in groundwater samples from the following two wells: MW-18D (107 µg/L) and MW-19D (102 µg/L). Chromium concentrations in groundwater samples from all wells sampled in this area decreased in comparison to previous sampling results.

#### *3.1.1.5 Church of God Wells*

The Church of God wells are located north of NE 78$^{th}$ Street, between the west side of the Clark County sports fields and the western Church of God property line. Eight wells in this area were

sampled. Chromium concentrations were below the 80 µg/L groundwater cleanup level in all eight wells sampled (Table 4). Chromium concentrations in groundwater in the Church of God area continue on a decreasing trend.

#### *3.1.1.6 Toe-of-Plume Wells*

The Toe-of-Plume wells are located west of the Church of God property. These wells are divided into the following two groups for discussion purposes: Sentinel wells and Other Toe wells. The Sentinel wells are located west (downgradient) of the toe of the plume. No Sentinel wells were sampled during the Fall 2012 event. Historically, chromium concentrations have been consistently well below the cleanup level in groundwater samples collected from the Sentinel wells.

The Other Toe wells are located east of the Sentinel wells and west of the Church of God property. There were no active extraction wells in this area during the Fall 2012 sampling event. Three wells in this group were sampled. Chromium concentrations were below the 80 µg/L groundwater cleanup level in all three wells sampled (Table 4).

### *3.1.2 Troutdale Aquifer*

The Troutdale aquifer is a primary drinking water source for several water districts in Clark County. Eleven Troutdale aquifer wells were sampled during the Fall 2012 sampling event, including the Bennett private well. None of the chromium concentrations detected exceeded the chromium cleanup level of 80 µg/L. Historically, chromium concentrations have not exceeded the Site cleanup level in groundwater samples from Troutdale aquifer monitoring wells.

The turbidity was elevated in well CPU-10 during sampling (50 Nephelometric Turbidity Units [NTUs]) because the pump contacted the bottom of the well during sampling and stirred up sediment, therefore, both filtered and non-filtered samples were collected from CPU-10. The total chromium result was 23.2 µg/L and the dissolved chromium result was 1 UJ µg/L. The dissolved chromium result more accurately reflects historic chromium results for the well and has therefore been included in report tables.

## 3.2 Trichloroethene Results and Distribution

As shown in Table 5, in 29 of the 73 groundwater samples collected during the Fall 2012 event TCE was detected at concentrations at or above the Site-specific cleanup level of 5 µg/L as established in the ROD (EPA 2000). The following subsections summarize the TCE results by aquifer and well grouping.

### *3.2.1 Alluvial Aquifer*

*3.2.1.1 Upgradient Wells*

Six wells in the Upgradient well area were sampled for TCE during the Fall 2012 event. TCE concentrations were below the cleanup level of 5 µg/L in all six wells.

*3.2.1.2 TCE Source Wells*

TCE concentrations were below the 5 µg/L groundwater cleanup level in nine of the 14 wells sampled in this area (Table 5). TCE concentrations exceeded the cleanup level in groundwater samples from the following five wells: AMW-1A (44 µg/L), AMW-2A (14 µg/L), AMW-12A (33 µg/L), AMW-53A (12 µg/L), and MW-1A (6.1 µg/L). The TCE concentrations in these five wells remained the same or increased in comparison to the last time they were sampled. Historically, the TCE concentrations in wells in this area tend to fluctuate (EA 2013).

*3.2.1.3 Proximal Wells*

TCE concentrations were below the 5 µg/L groundwater cleanup level in nine of the 12 wells sampled for TCE in this area (Table 5). In Fall 2012 concentrations in wells MW-9B and MW-12C dropped below the cleanup level for the first time. TCE concentrations exceeded the cleanup level in groundwater samples from the following three wells: MW-6B (5.1 µg/L), MW-10B (16 µg/L), and MW-13C (5.8 µg/L). Historically, TCE concentrations in groundwater samples from this area have been on an overall decreasing trend (EA 2013).

*3.2.1.4 Intermediate Wells*

TCE concentrations exceeded the groundwater cleanup level of 5 µg/L in samples from 13 of the 16 wells sampled for TCE in this area (Table 5). Sampling in this area included three monitoring wells (AMW-17, AMW-18, and AMW-64) which are impacted by the Northern Plume. TCE concentrations in samples collected from these wells were 210 µg/L in AMW-17, 39 µg/L in AMW-18, and 110 µg/L in AMW-64. The TCE concentration in groundwater from well AMW-17 has been increasing since Spring 2010 (1.1 µg/L), indicating the continued migration of the Northern Plume to this well. TCE concentrations in the other two wells decreased since the previous sampling event. Additional discussion of the Northern Plume, including previous monitoring results, is provided in Appendix E.

TCE concentrations in samples collected from the OU-3 plume remain above the 5 µg/L cleanup level in the following wells: AMW-59 (92 µg/L), MW-14C (19 µg/L), MW-14E (67 µg/L), MW-18D (49 µg/L), MW-18E (170 µg/L), MW-19D (34 µg/L), MW-20D (45 µg/L), MW-38 (7.4 µg/L), CPU-14 (5.2 µg/L), and PZ-39 (54 µg/L). TCE concentrations in well MW-15E (4.5 µg/L) dropped below the cleanup level for the first time in Spring 2012 and remained below in Fall 2012. TCE concentrations in groundwater samples collected from wells in this area remained relatively constant or decreased in comparison to previous sampling results. The TCE concentration in groundwater samples from extraction well AMW-59 continues to fluctuate.

Historically, TCE concentrations in groundwater samples from wells in this area have been stable or on a decreasing trend.

*3.2.1.5 Church of God Wells*

TCE concentrations were below the 5 µg/L groundwater cleanup level in seven of the 11 wells sampled for TCE in this area (Table 5). TCE concentrations exceeded the cleanup level in groundwater samples from the following four wells: AMW-27 (6.8 µg/L), AMW-61 (5.4 µg/L), MW-21 D (5.3 µg/L), and MW-22D (5.6 µg/L). TCE concentrations in samples collected from these wells continue on a decreasing trend (Table 5).

*3.2.1.6 Toe-of-Plume Wells*

Three groundwater samples were collected from wells in the Other Toe group during the Fall 2012 event (Table 5). No samples were collected from Sentinel wells. The TCE concentration exceeded the 5 µg/L groundwater cleanup level only in the sample collected from well MW-35 (5.4 µg/L). TCE concentrations in groundwater from well MW-35 have been fluctuating above and below the cleanup level since 2004 (EA 2013).

### *3.2.2 Troutdale Aquifer*

Groundwater samples were collected from 11 Troutdale aquifer wells, including the Bennett private well, during the Fall 2012 event (Table 5). TCE concentrations in groundwater exceeded the 5 µg/L cleanup level in three of the wells sampled; AMW-24 (11 µg/L), the Bennett private well (6.9 µg/L), and MW-33 (11 µg/L). Historically, TCE concentrations in groundwater from these three wells have fluctuated somewhat but generally have remained above the cleanup level (EA 2013).

## 3.3 Tetrachloroethene Results and Distribution

Tetrachloroethene (PCE) was not detected above the 5 µg/L Site-specific cleanup level as established in the ROD (EPA 2000) in any of the 73 groundwater samples analyzed for VOC's during the Fall 2012 sampling event (Table 2).

## 3.4 Trichlorofluoromethane Results and Distribution

Trichlorofluoromethane (CFC-11) was not detected above the 2,400 µg/L Model Toxics Control Act (MTCA) Method B cleanup level in any of the 73 groundwater samples analyzed for VOC's during the Fall 2012 sampling event (Table 2).

## 3.5 1,1,1-Trichloroethane Results and Distribution

The compound 1,1,1-trichloroethane (1,1,1-TCA) was not detected above the 200 µg/L Site-specific cleanup level, as established in the ROD (EPA 2000), in any of the 73 groundwater samples analyzed for VOC's during the Fall 2012 sampling event (Table 2).

### 3.6 1,1-Dichloroethene Results and Distribution

The compound 1,1-dichloroethene (1,1-DCE) was detected above the 1.0 µg/L Site-specific cleanup level as established in the ROD (EPA 2000) in 11 of the 73 groundwater samples analyzed for VOC's during the Fall 2012 event (Table 2). Wells with 1,1-DCE concentrations above the cleanup level included eight alluvial aquifer wells and three Troutdale aquifer wells, as shown in Table 2.

### 3.7 C*is*-1,2-Dichloroethene Results and Distribution

The compound *cis*-1,2-dichloroethene (*cis*-1,2-DCE) was not detected above the 70 µg/L EPA Maximum Contaminant Level (MCL) in any of the 73 groundwater samples analyzed for VOC's during the Fall 2012 sampling event (Table 2).

### 3.8 Groundwater Elevations

Depth-to-groundwater measurements were collected from monitoring and extraction wells during the Fall 2012 semiannual event. Both alluvial aquifer and Troutdale aquifer wells were gauged on 18 October 2012. Groundwater levels were measured under active pumping conditions. The groundwater elevation for each well was determined by subtracting the depth-to-groundwater measurement from the surveyed top-of-casing measurement. Groundwater elevations and well construction details are presented in Appendix A.

Generalized groundwater elevation contour maps for the alluvial and Troutdale aquifers for the Fall 2012 water level gauging event are presented as Figures 6 and 7, respectively. These contour maps are similar to those generated based on previous sampling events.

# 4. ANALYTICAL DATA QUALITY

This section summarizes the results of the data review and validation, including summaries of the QA/QC samples collected during the Fall 2012 semiannual groundwater monitoring event. The analytical results for the environmental and QA/QC samples are contained in Appendix D.

Precision is evaluated by comparison of results for primary and duplicate sample analyses and for laboratory duplicate analyses. Accuracy is evaluated using the analytical results for blanks, surrogates, and blank spikes. Representativeness is evaluated by examining chain-of-custody paperwork and verifying that analyses were performed within allowable holding times. Comparability is evaluated by examining laboratory reporting limits. Completeness is evaluated by calculating the percentage of acceptable data.

## 4.1 Data Validation

One data package (CAS sample delivery group [SDG] K1210798) was selected for data validation and submitted to the EA project chemist, Ms. Brenda Nuding, for review. The designated SDG contained 19 samples, including field duplicates and other QC samples, which were analyzed for selected VOCs by EPA Method 8260C and/or total or dissolved chromium by EPA Method 200.7. The data were validated according to the National Functional Guidelines for Organic and Inorganic Data Review (EPA 2008; 2010) as well as the Reference QASP (EA 2004). The associated data validation report is presented in Appendix F.

The analytical results for project samples are acceptable as reported and usable for the intended purpose; none of these data have been qualified or rejected, unless noted below.

For the analysis of total chromium by EPA Method 200.7, the results for total chromium for samples 1243002, 1243003, and 1243008 were flagged with the UJ qualifier (previously unqualified, see Appendix F) because the concentrations reported for these samples were less than five times the amount reported for the associated equipment rinsate blank. For the analysis of VOCs by EPA Method 8260C the results for TCE for sample 1242039 was flagged with a J qualifier due to the field duplicate sample results.

## 4.2 Field Duplicates

Eight field duplicates were collected to evaluate the precision of sampling procedures and laboratory analyses. The following table presents a summary of the field duplicates and associated field samples collected.

The precision between primary and duplicate field sample results is specified in the Reference QASP (EA 2004) as a maximum relative percent difference (RPD) of 25 percent. The RPDs for field duplicate results greater than the associated reporting limits were less than 25 percent, in accordance with the project established limit unless otherwise noted. The RPD exceeded the limit of 25 percent for only one set of field duplicate and original sample results (field duplicate

and original sample results for TCE for the samples collected at MW-14C). The sample results have been qualified as estimated on the basis of field duplicate RPD. A comparison of VOC and chromium concentrations for environmental (primary) and duplicate groundwater samples is presented in Table 6.

**Field Duplicate Summary**

| Well ID | Sample No. | Field Duplicate Sample No. | Analysis | Sample Collection Date | Sample Collection Time |
|---|---|---|---|---|---|
| MW-6B | 1242003 | 1242009 | VOCs/Total Chromium | 15 October 2012 | 13:47/13:52 |
| AMW-24 | 1242026 | 1242028 | VOCs/Total Chromium | 17 October 2012 | 11:50/12:00 |
| MW-21D | 1242027 | 1242029 | VOCs/Total Chromium | 16 October 2012 | 10:15/10:20 |
| MW-14C | 1242039 | 1242041 | VOCs/Total Chromium | 16 October 2012 | 13:25/13:30 |
| AMW-2A | 1242040 | 1242042 | VOCs | 18 October 2012 | 09:14/09:19 |
| AMW-56A | 1242046 | 1242048 | VOCs | 18 October 2012 | 09:35/09:40 |
| MW-13C | 1242064 | 1242066 | VOCs | 18 October 2012 | 11:10/11:15 |
| MW-27D | 1243003 | 1243004 | VOCs/Total Chromium | 22 October 2012 | 15:40/15:45 |

**NOTE**: VOCs = volatile organic compounds.

## 4.3 Equipment Rinsate Blanks

Three equipment rinsate blank samples (shown in the table below) were collected to evaluate the effectiveness of field decontamination procedures. One equipment rinsate blank was collected per pump, per day, on days when non-dedicated sampling equipment was used. The equipment rinsate blank samples were analyzed for the same parameters as the associated field samples.

The chromium and VOC analytical results for equipment rinsate blank samples were reported below the method detection limits, with the following exceptions: total chromium in samples 1243005 (3.4 J µg/L), 1243010 (2.5 J µg/L), and 1243016 (1.5 J µg/L) and dichloromethane (methylene chloride) in sample 1243010 (0.12 J µg/L). These compounds were not detected in the associated samples or were detected at a concentration more than five times that of the associated equipment rinsate blank, with the following exceptions. The results for total chromium for samples 1243002, 1243003, and 1243008 were flagged with the UJ qualifier. No other data have been qualified on the basis of these field blank results.

**Equipment Rinsate Blank Summary**

| Sample No. | Analyses | Sample Collection | | Comments |
|---|---|---|---|---|
| | | Date | Time | |
| 1243005 | VOCs/Total Chromium | 22 October 2012 | 14:15 | Associated with 1243002 (MW-35) and 1243003 (MW-27D) |
| 1243010 | VOCs/Total Chromium | 23 October 2012 | 13:40 | Associated with 1243007 and 1243008 (CPU-10), 1243009 (CPU-14), 1243011 (AMW-64), and 1243012 (AMW-18) |
| 1243016 | VOCs/Total Chromium | 24 October 2012 | 11:20 | Associated with 1243014 (MW-1A), 1243015 (MW-3A), 1243017 (MW-2A), 1243018 (MW-4A), 1243019 (MW-4B) |

## 4.4 Trip Blanks

The results of the trip blanks are used to evaluate the potential for sample cross-contamination during sample handling, shipping, or storage on site or at the laboratory. Trip blanks were collected to assess the potential for VOC cross-contamination. A trip blank was included in each of the coolers containing project samples for VOC analysis, as specified in the Reference QASP (EA 2004). The following table presents a summary of the trip blank samples collected. No VOC contamination was reported in the trip blanks.

| Trip Blank Summary | |
|---|---|
| **Sample No.** | **Associated Field Samples** |
| 1242010 | 1242001 through 1242009, 1242011 through 1242014, 1242016, and 1242017 |
| 1242015 | 1242018 through 1242023, 1242025, 1242027, 1242029, 1242031, 1242033, and 1242035 |
| 1242055 | 1242037, 1242039, 1242041, 1242043, 1242045, 1242047, 1242049, 1242051, and 1242053 |
| 1242069 | 1242024 through 1242056 even numbers only, and 1242057 through 1242060 |
| 1242073 | 1242061 through 1242068, and 1242070 through 1242072 |
| 1243001 | 1243002 through 1243010 |
| 1243020 | 1243011 through 1243019 |

## 4.5 Completeness

Usable analytical data were available for the VOC and chromium analyses; therefore, the total analytical completeness was 100 percent. Analytical completeness was calculated by reviewing the number of acceptable analytical results against the total number of analytical results. All of the planned field samples were collected, resulting in a field completeness of 100 percent.

## 4.6 Data Review Summary

The following table summarizes the findings for both the data validation and the data quality review.

| Parameter | Holding Time | Field/Method Blank Contamination | Precision | | Accuracy | | | Completeness | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Lab | Field | SMC | MS/ MSD | LCS | Analytical | Field |
| VOCs | X | XB | X | X | X | X | X | 100% | 100% |
| Chromium | X | X | X | X | NA | X | X | 100% | 100% |

NOTE:
X = The data are usable as reported based on the review of this quality measurement.
XB = The data have been affected by field blank/laboratory contamination; false-positives and/or estimated concentrations may exist.
SMC = System monitoring compound surrogate.
MS/MSD = Matrix spike/matrix spike duplicate.
LCS = Laboratory control sample.
NA = The quality measurement does not apply to this matrix or analytical methodology.
VOCs = Volatile organic compounds.

The data collected as part of the Fall 2012 semiannual groundwater monitoring event were found to meet the standards established in the Reference QASP (EA 2004).

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# 5. FINDINGS AND RECOMMENDATIONS

## 5.1 Findings

In general, contaminant concentrations in groundwater across the Site have decreased or remained stable since the previous semiannual sampling event. Notable exceptions are identified below. No significant changes to the plume footprints, as shown in Figures 4 and 5, were noted.

### *5.1.1 Chromium*

Chromium concentrations were below the 80 µg/L Site-specific cleanup level in all wells sampled in the following areas: Upgradient, TCE Source, Church of God, Toe of Plume, and Troutdale Aquifer. Chromium concentrations exceeded the cleanup level in six of 42 wells sampled for chromium during this event, in the Proximal and Intermediate well groups. The highest chromium concentration detected was in groundwater from Proximal well MW-4B (407 µg/L). In Proximal well MW-2A (190 µg/L) the chromium concentration increased in comparison to the last time the well was sampled in Fall 2011 (81.3 µg/L); however, significant fluctuations in chromium concentrations are typical for wells in this area.

### *5.1.2 Trichloroethene*

TCE concentrations exceeded the 5 µg/L Site-specific cleanup level in 29 of 73 wells sampled for VOC's during this event. TCE concentrations exceeded the cleanup level in all well groups sampled except the Upgradient group. The TCE concentrations in two TCE Source wells (AMW-1A and AMW-53A) increased in comparison to the last time they were sampled; fluctuations are typical in these two wells. In the Intermediate well group, the TCE concentrations continue to fluctuate. The TCE concentration in well AMW-17, located in the Northern Plume area, increased from 29 µg/L in Spring 2011 to 210 µg/L in Fall 2012, indicating the continued migration of the Northern Plume to this well.

## 5.2 Recommendations

Based on the findings of the Fall 2012 semiannual sampling event, the following recommendation is made:

- Continue sampling the wells in accordance with the schedule in the 2011 Annual Status Report (EA 2013), with revisions as described in the QASP Addendums and as approved by EPA. This schedule will be updated, as appropriate, in the 2012 Annual Status Report.

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# 6. REFERENCES

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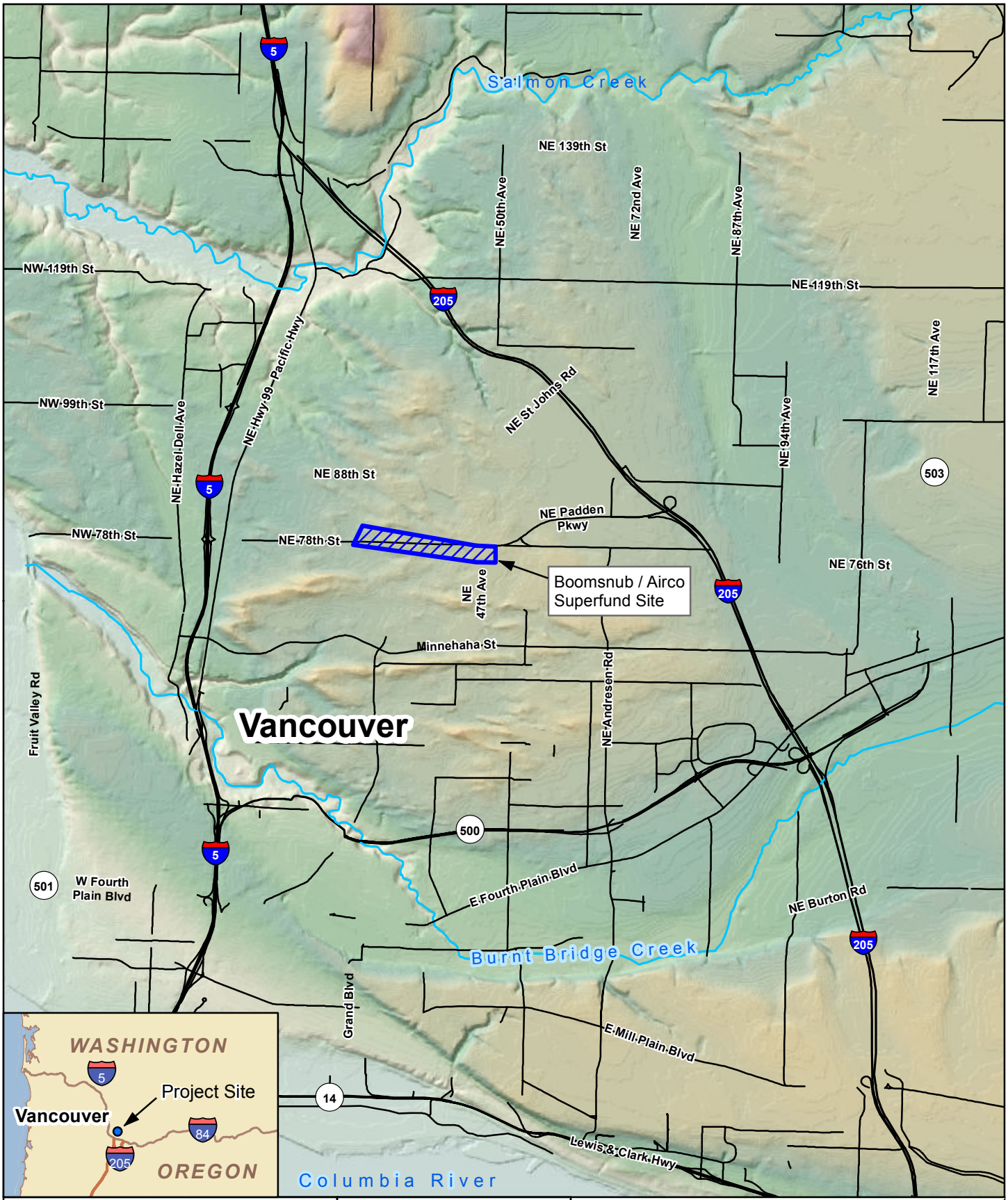
# Figures

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Seattle, WA 98121
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Fax: (206) 443-7646

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FIGURE 1
SITE LOCATION MAP

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N.E. 25th Ave.
Well CPU-4S, 4D
Located Approx. 3/10 mile
North of NE 78th Street

N.E. 82nd St.

N.E. St. John's Rd.

N.E. 78th St.

AMW-23
AMW-43
MW-30
AMW-44
AMW-45
MW-46
MW-47
MW-41
CV-21
AMW-63
CV-20
AMW-42
CV-24
CV-23
MW-48
MW-35
MW-31
CV-19
MW-32
MW-36
MW-24D
Church of God
MW-29
MW-28
CPU-16
MW-37
CV-22
CV-18
CV-17
CV-16
CV-14
MW-25D
MW-49
CV-14A
AMW-27
AMW-61
CV-15
MW-26D
CPU-13
MW-27D
MW-23D
AMW-15
AMW-14
MW-21D
CV-13
MW-22D
CV-12
CV-11
MW-20D
AMW-60
MW-38
MW-40, PZ-40
PZ-39, MW-39
CV-10
CV-9
MW-19D
AMW-22
AMW-16
AMW-64
AMW-17
CROCKFORD
AMW-18
COLUMBIA VET
MW-15E
EC-1
MW-18E
MW-18D
CV-8
MW-17E
MW-16E
AMW-59
MW-14C
MW-12C
MW-9B
MW-9C
CV-7
CV-8
MW-14E
CV-5
MW-10B, 10C
CV-4
CV-3
CV-2
CV-1
MW-34
MW-13C
MW-5A, 5B
MW-6A
MW-6B
MW-6C
MW-6D
LV
MW-33
PERMALUME
See Inset A
Linde
Former Boomsnub Corporation
CPU-3S
CPU-3D
CPU-7
CPU-15
FERGUSON
HORN
GARRISON
CPU-12
CPU-10
CPU-14
CPU-1S, 1D
CPU-2
AMW-62
GRIMM
ZENT
BENNETT
AMW-24
AMW-51
COLF
FITZGERALD
N.E. 43rd Ave.
N.E. 40th Ave.
N.E. 51st Ave.
Lewis & Clark Railroad

Inset A
AMW-4A
AMW-25
AMW-9A
AMW-5A
AMW-8A
AMW-13A
N.E. 47th Ave.
MW-8B
MW-4A
MW-4B
MW-4BSHED
MW-4C
CV-2
MW-7C
CV-1
PW-1B
AMW-52A
AMW-52C
AMW-53A
AMW-53B
AMW-53C
IWS-4S
IWS-4D
AMW-26
AMW-10A
PZ-2
AMW-1A
AMW-1C
AMW-1B
AMW-2B
AMW-2A
RAMW-2C
MW-1A
MW-1B
MW-1C
GWSW-1
GWSW-2
AMW-58
MW-11A, 11B
MW-7C
AMW-50
AMW-54A
AMW-54C
AMW-55C
AMW-55A
MW-3A
MW-3B
MW-3C
MW-2A
MW-2B
MW-2C
AMW-56C
AMW-12A
AMW-19A
AMW-56A
AMW-19B
AMW-11A
AMW-20
IWS-2S
PZ-1
AMW-57
AMW-7A
AMW-3A
AMW-21
AMW-6A

Monitoring Well Sampled in Fall 2012
Extraction Well Sampled in Fall 2012
Supply Well Sampled in Fall 2012
Abandoned Monitoring Well
Groundwater Monitoring Well
Groundwater Extraction Well
Groundwater Supply Well
Screened in Troutdale Aquifer
Containment Vaults
Extraction System Forcemain
Abandoned Pipeline

EA Engineering, Science, & Technology, Inc.
2200 Sixth Avenue, Suite 707
Seattle, WA 98121
Phone: (206) 452-5350
Fax: (206) 443-7646

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FIGURE 2
SAMPLING LOCATIONS, FALL 2012

N.E. 25th Ave.
Well CPU-4S, 4D
Located Approx. 3/10 mile
North of NE 78th Street

N.E. 82nd St.

N.E. St. John's Rd.

N.E. 78th St.

AMW-23
AMW-43
MW-30
MW-41
AMW-63
AMW-44
AMW-45
AMW-42
MW-46
MW-47
MW-48
MW-35
MW-31
MW-32
MW-37
MW-36
MW-28
CPU-6
Church of God
MW-25D
MW-27D
MW-23D
MW-21D
MW-49
AMW-27
AMW-61
MW-26D
CPU-13
MW-22D
N.E. 78th St.
CPU-3S
CPU-3D
FERGUSON
CPU-15
HORN
GARRISON
CPU-12
CPU-10
CPU-14
AMW-22
AMW-16
AMW-64
AMW-17
CROCKFORD
MW-20D
AMW-60
MW-38
AMW-18
MW-40, PZ-40
PZ-39, MW-39
MW-19D
MW-15E
MW-17E
MW-18E
MW-18D
MW-16E
AMW-59
MW-14C
MW-14E
MW-12C
MW-9B
MW-9C
MW-10B, 10C
MW-34
MW-13C
MW-5A, 5B
CPU-2
EC-1
LV
MW-6A
MW-6B
MW-6C
MW-6D
MW-33
COLUMBIA VET
PERMALUME
See Inset A
Linde
Former Boomsnub Corporation
CPU-7
AMW-62
GRIMM
ZENT
BENNETT
AMW-24
N.E. 43rd Ave.
N.E. 51st Ave.
AMW-51
Lewis & Clark Railroad
N.E. 40th Ave.
COLF
FITZGERALD

Inset A
AMW-4A
AMW-25
AMW-9A
AMW-5A
AMW-8A
AMW-13A
N.E. 47th Ave.
MW-8B
MW-4A
MW-4B
MW-4BSHED
MW-4C
MW-7C
PW-1B
MW-7C
AMW-58
MW-11A, 11B
MW-3A
MW-3B
MW-3C
MW-2A
MW-2B
MW-2C
AMW-52A
AMW-52C
IWS-8S
IWS-8D
AMW-26
AMW-53A
AMW-53B
AMW-53C
AMW-1A
AMW-1C
AMW-1B
MW-1A
MW-1B
MW-1C
GWS-1
AMW-2B
AMW-2A
RAMW-2C
GWS-2
AMW-50
AMW-54A
AMW-54C
AMW-55C
AMW-55A
AMW-56C
AMW-12A
AMW-56A
AMW-19A
AMW-19B
IWS-2S
AMW-3A
AMW-20
AMW-21
AMW-10A
PZ-2
AMW-11A
PZ-1
AMW-7A
AMW-57
AMW-6A

Alluvial Aquifer Monitoring Well
Alluvial Aquifer Extraction Well
Abandoned
Groundwater Supply Well
Screened in Troutdale Aquifer
Toe-of-Plume Wells - Sentinel
Toe-of-Plume Wells - Other
Church of God Wells
Intermediate Wells
Proximal Wells
TCE Source Wells
Upgradient Wells

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Seattle, WA 98121
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FIGURE 3
EXTRACTION AND MONITORING WELL GROUPINGS

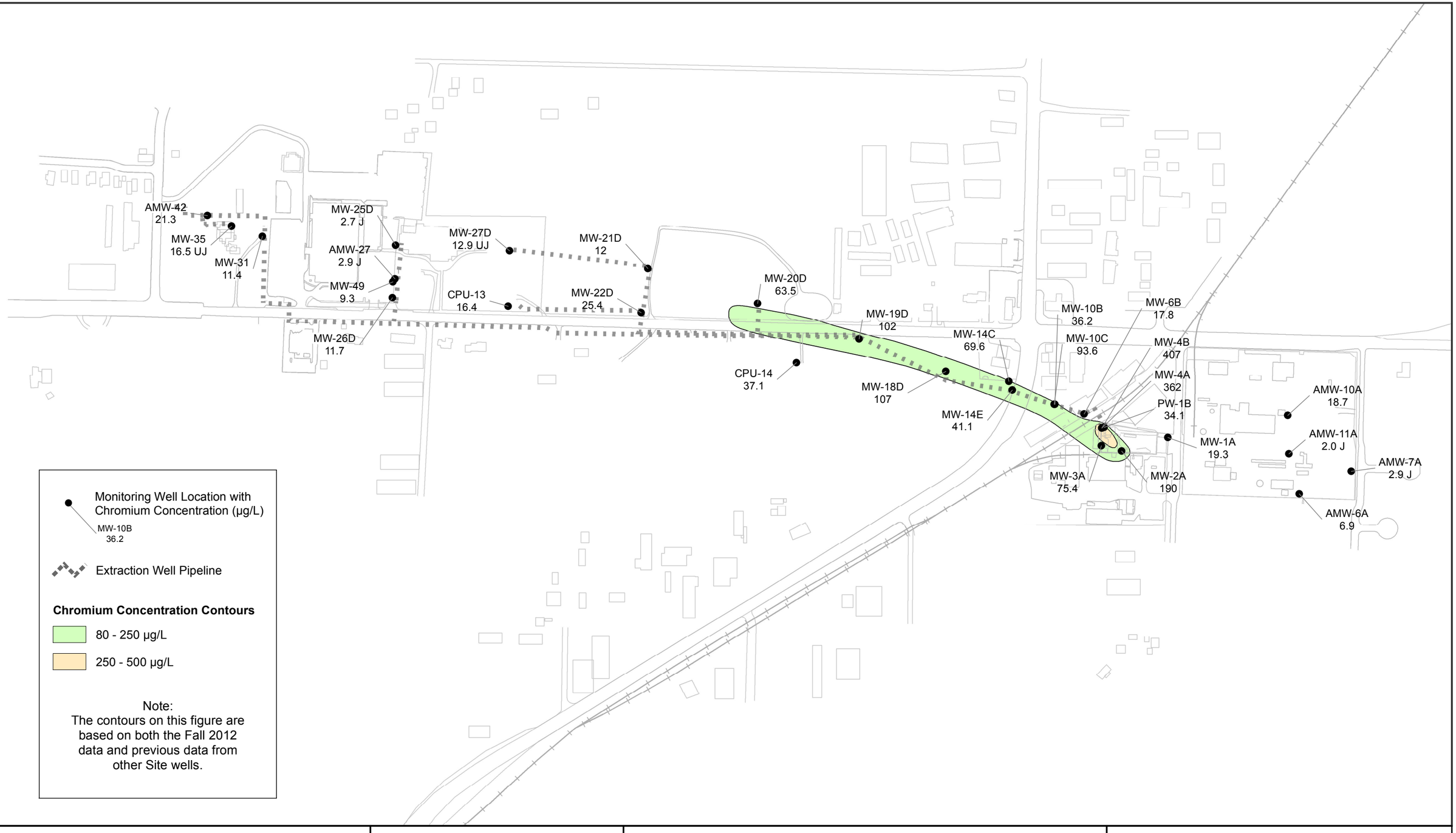


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FIGURE 4
CONTOUR MAP OF CHROMIUM CONCENTRATIONS
IN THE ALLUVIAL AQUIFER, FALL 2012

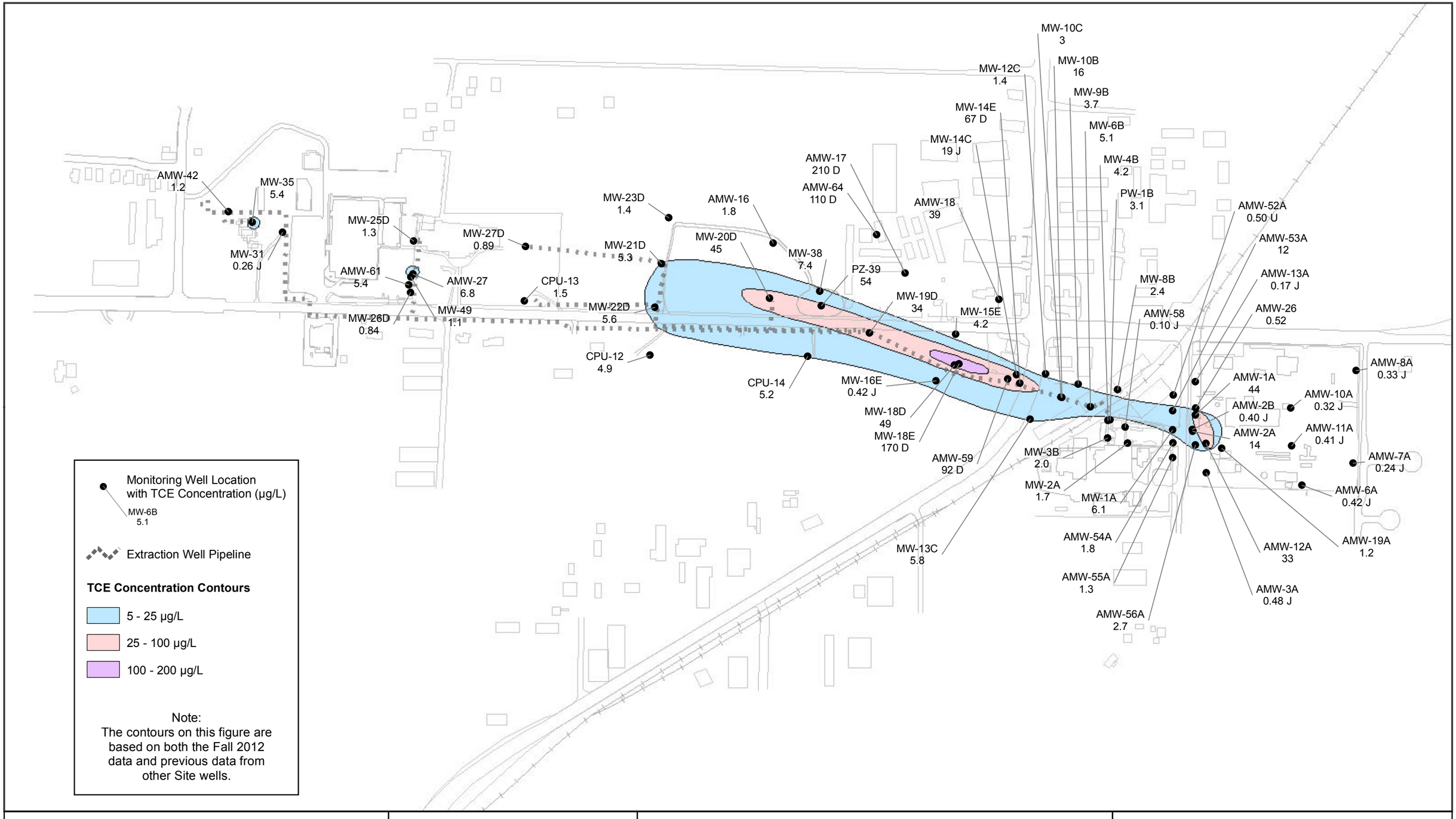


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FIGURE 5
CONTOUR MAP OF OU-3 TRICHLOROETHENE CONCENTRATIONS IN THE ALLUVIAL AQUIFER
FALL 2012

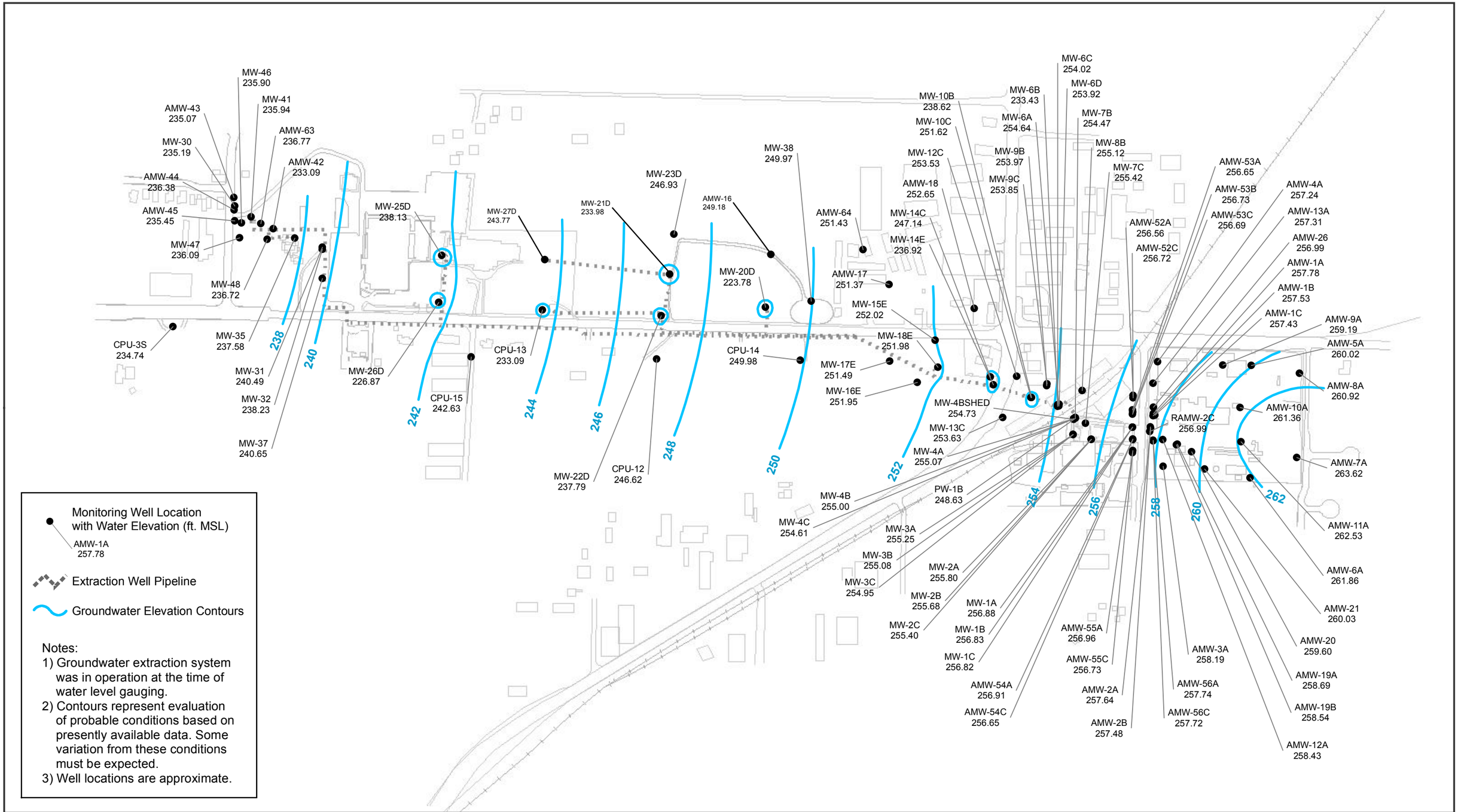


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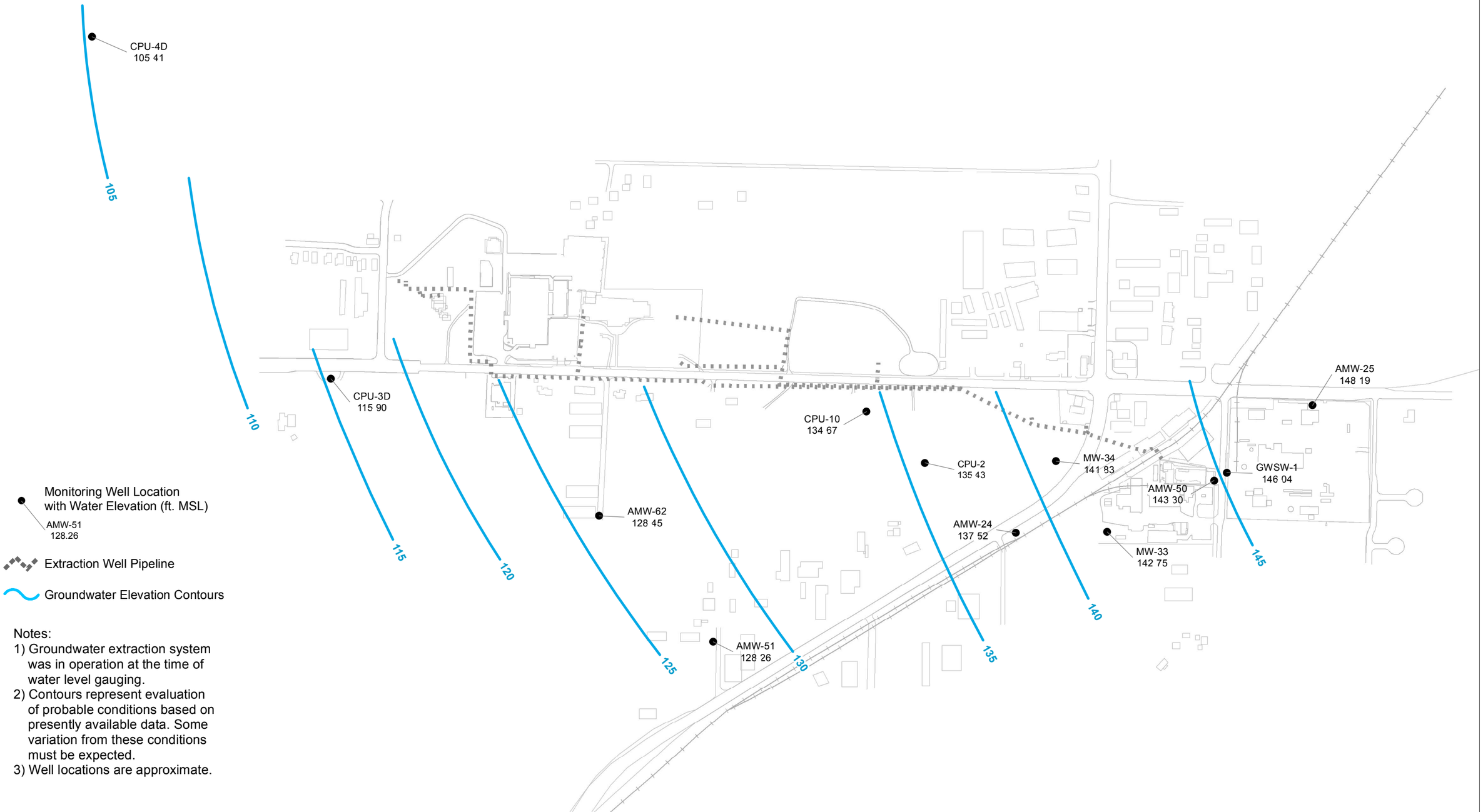
FIGURE 6
ALLUVIAL AQUIFER GROUNDWATER CONTOURS
FALL 2012




Notes:
1) Groundwater extraction system was in operation at the time of water level gauging.
2) Contours represent evaluation of probable conditions based on presently available data. Some variation from these conditions must be expected.
3) Well locations are approximate.

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FIGURE 7
TROUTDALE AQUIFER GROUNDWATER CONTOURS
FALL 2012

# Tables

## Table 1. Extraction and Monitoring Well Groupings

| Well Group | AMW Wells | | MW Wells | | Other Wells | |
|---|---|---|---|---|---|---|
| Upgradient | **AMW-6A** | **AMW-10A** | | | | |
| | **AMW-7A** | **AMW-11A** | | | | |
| | **AMW-8A** | | | | | |
| TCE Source (OU-2) | **AMW-1A** | **AMW-52A** | **MW-1A** | | | |
| | **AMW-2A** | **AMW-53A** | | | | |
| | **AMW-2B** | **AMW-53A** | | | | |
| | **AMW-3A** | **AMW-54A** | | | | |
| | **AMW-12A** | **AMW-55A** | | | | |
| | **AMW-13A** | **AMW-56A** | | | | |
| | **AMW-19A** | | | | | |
| | **AMW-26** | | | | | |
| Proximal | **AMW-58** | | **MW-2A** | MW-7B | **PW-1B** | |
| | | | **MW-3A** | **MW-8B** | | |
| | | | **MW-3B** | **MW-9B** | | |
| | | | **MW-4A** | **MW-10B** | | |
| | | | **MW-4B** | **MW-10C** | | |
| | | | MW-4BShed | **MW-12C** | | |
| | | | MW-6A | **MW-13C** | | |
| | | | **MW-6B** | | | |
| Intermediate | **AMW-16** | | **MW-14C** | **MW-18E** | **CPU-14** | |
| | **AMW-17** | | **MW-14E** | **MW-19D** | **PZ-39** | |
| | **AMW-18** | | **MW-15E** | **MW-20D** | | |
| | **AMW-59** | | **MW-16E** | **MW-38** | | |
| | **AMW-64** | | **MW-18D** | | | |
| Church of God | **AMW-27** | | **MW-21D** | **MW-26D** | **CPU-12** | |
| | **AMW-61** | | **MW-22D** | **MW-27D** | **CPU-13** | |
| | | | **MW-23D** | **MW-49** | | |
| | | | **MW-25D** | | | |
| Toe of Plume: | **AMW-42** | | **MW-31** | MW-41 | | |
| Other Toe | AMW-63 | | **MW-35** | | | |
| Troutdale Aquifer | **AMW-24** | **AMW-51** | **MW-33** | | **Bennett** | **CPU-3D** |
| | **AMW-25** | **AMW-62** | **MW-34** | | **CPU-2** | **CPU-10** |
| | **AMW-50** | | | | | |

NOTES:
- Wells shown in **bold** and shaded were sampled during the Fall 2012 semiannual monitoring event.
- AMW wells were installed by Linde LLC.
- MW wells were installed by the U.S. Environmental Protection Agency or Washington Department of Ecology.
- CPU wells were installed by Clark Public Utilities.
- Only wells being sampled as part of the current monitoring plan are listed on this table.

## Table 2. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples—Fall 2012 (in µg/L) [a]

| Well Group | Well | Chromium | TCE | PCE | CFC-11 | 1,1,1-TCA | 1,1-DCE | Cis-1,2-DCE |
|---|---|---|---|---|---|---|---|---|
| Upgradient | AMW-6A | 6.9 | 0.42 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-7A | 2.9 J | 0.24 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-8A | NA | 0.33 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-10A | 18.7 | 0.32 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-11A | 2.0 J | 0.41 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| TCE Source (OU-2) | AMW-1A | NA | **44** | 1.4 | 11 | 6.8 | 0.93 | 0.39 J |
| | AMW-2A | NA | **14** | 0.80 | 0.81 | 0.53 | 0.11 J | 0.50 U |
| | AMW-2B | NA | 0.40 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-3A | NA | 0.48 J | 0.40 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-12A | NA | **33** | 0.56 | 0.39 J | 0.19 J | 0.53 | 0.27 J |
| | AMW-13A | NA | 0.17 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-19A | NA | 1.2 | 0.33 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-26 | NA | 0.52 | 0.13 J | 0.17 J | 0.10 J | 0.50 U | 0.50 U |
| | AMW-52A | NA | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-53A | NA | **12** | 0.65 | 4.8 | 1.7 | 0.37 J | 0.28 J |
| | AMW-54A | NA | 1.8 | 0.16 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-55A | NA | 1.3 | 0.28 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-56A | NA | 2.7 | 0.40 J | 0.24 J | 0.12 J | 0.50 U | 0.50 U |
| | MW-1A | 19.3 | **6.1** | 0.83 | 0.53 | 0.50 U | 0.50 U | 0.50 U |
| Proximal | AMW-58 | NA | 0.10 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.15 J |
| | MW-2A | **190** | 1.7 | 0.78 | 0.20 J | 0.50 U | 0.50 U | 0.50 U |
| | MW-3A | 75.4 | NA | NA | NA | NA | NA | NA |
| | MW-3B | NA | 2.0 | 0.89 | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | MW-4A | **362** | NA | NA | NA | NA | NA | NA |
| | MW-4B | **407** | 4.2 | 0.64 | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | MW-6B | 17.8 | **5.1** | 0.79 | 0.69 | 0.27 J | 0.50 U | 0.16 J |
| | MW-8B | NA | 2.4 | 1.3 | 0.21 J | 0.50 U | 0.50 U | 0.50 U |
| | MW-9B | NA | 3.7 | 2.0 | 1.8 | 0.25 J | 0.11 J | 0.13 J |
| | MW-10B | 36.2 | **16** | 1.5 | 0.18 J | 0.11 J | 0.24 J | 0.50 U |
| | MW-10C | **93.6** | 3.0 | 1.0 | 0.97 | 0.17 J | 0.50 U | 0.50 U |
| | MW-12C | NA | 1.4 | 0.55 | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | MW-13C | NA | **5.8** | 0.67 | 0.50 U | 0.13 J | 0.50 U | 0.50 U |
| | PW-1B | 34.1 | 3.1 | 0.69 | 0.12 J | 0.50 U | 0.50 U | 0.50 U |
| Intermediate | AMW-16 | NA | 1.8 | 0.50 U | 0.50 U | 2.2 | 0.66 | 0.23 J |
| | AMW-59 | NA | **92** | 0.50 U | 0.50 U | 0.50 U | **11** | 7.3 |
| Cleanup or Guidance Level | | 80 | 5 | 5 | 2,400 | 200 | 1 | 70 |

## Table 2. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples—Fall 2012 (in µg/L) [a]

| Well Group | Well | Chromium | TCE | PCE | CFC-11 | 1,1,1-TCA | 1,1-DCE | Cis-1,2-DCE |
|---|---|---|---|---|---|---|---|---|
| Intermediate Cont. | CPU-14 | 37.1 | **5.2 J** | 0.50 U | 0.37 J | 0.14 J | 0.11 J | 0.50 U |
| | MW-14C | 69.6 | **19 J*** | 1.2 | 0.18 J | 0.090 J | 0.12 J | 0.15 J |
| | MW-14E | 41.1 | **67** | 3.9 | 0.43 J | 0.29 J | **3.7** | 3.3 |
| | MW-15E | NA | 4.2 | 0.30 J | 0.13 J | 0.14 J | 0.12 J | 0.50 U |
| | MW-16E | NA | 0.42 J | 0.50 U | 0.50 U | 0.50 U | 0.14 J | 0.16 J |
| | MW-18D | **107** | **49** | 2.4 | 1.1 | 0.43 J | 0.85 | 0.65 |
| | MW-18E | NA | **170** | 0.50 U | 0.50 U | 0.50 U | **14** | 3.7 |
| | MW-19D | **102** | **34** | 1.9 | 0.46 J | 0.11 J | **1.7** | 0.45 J |
| | MW-20D | 63.5 | **45** | 1.2 | 0.43 J | 0.15 J | **3.2** | 0.66 |
| | MW-38 | NA | **7.4** | 1.7 | 0.22 J | 0.69 | 0.33 J | 0.24 J |
| | PZ-39 | NA | **54** | 1.6 | 9.4 | 1.1 | **4.5** | 1.1 |
| Northern Plume | AMW-17 | NA | **210** | 0.90 | 0.50 U | 2.5 | **1.2** | 0.50 U |
| | AMW-18 | NA | **39** | 0.15 J | 0.43 J | 0.16 J | 0.50 U | 0.50 U |
| | AMW-64 | NA | **110** | 0.27 J | 0.50 U | 1.2 | **1.5** | 1.0 |
| Church of God | AMW-27 | 2.9 J | **6.8** | 2.2 | 0.50 U | 0.12 J | 0.28 J | 0.50 U |
| | AMW-61 | NA | **5.4** | 2.5 | 0.50 U | 0.10 J | 0.44 J | 0.50 U |
| | CPU-12 | NA | 4.9 | 0.50 U | 0.50 | 0.50 U | 0.50 U | 0.50 U |
| | CPU-13 | 16.4 | 1.5 | 0.69 | 0.28 J | 0.50 U | 0.50 U | 0.50 U |
| | MW-21D | 12 | **5.3** | 0.13 J | 0.32 J | 0.20 J | **1.0** | 0.61 |
| | MW-22D | 25.4 | **5.6** | 1.7 | 0.21 J | 0.50 U | 0.22 J | 0.50 U |
| | MW-23D | NA | 1.4 | 0.50 U | 0.29 J | 0.27 J | 0.54 | 0.27 J |
| | MW-25D | 2.7 J | 1.3 | 0.50 U | 0.50 U | 0.15 J | 0.24 J | 0.25 J |
| | MW-26D | 11.7 | 0.84 | 0.30 J | 0.29 J | 0.50 U | 0.50 U | 0.50 U |
| | MW-27D | 12.9 UJ | 0.89 | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | MW-49 | 9.3 | 1.1 | 0.27 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| Toe of Plume | AMW-42 | 21.3 | 1.2 | 0.50 U | 0.50 U | 0.080 J | 0.50 U | 0.50 U |
| | MW-31 | 11.4 | 0.26 J | 0.12 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | MW-35 | 16.5 UJ | **5.4** | 0.44 J | 0.50 U | 0.090 J | 0.16 J | 0.50 U |
| Troutdale | AMW-24 | 8.8 | **11** | 0.50 U | 0.14 J | 0.37 J | **1.6** | 3.4 |
| | AMW-25 | 1.9 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-50 | 2.1 J | 0.50 U | 0.13 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | AMW-51 | 2.1 J | 0.24 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.09 J |
| | AMW-62 | 1.5 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | BENNETT | 5.0 U | **6.9** | 0.50 U | 0.50 U | 0.34 J | **1.1** | 2.4 |
| Cleanup or Guidance Level | | 80 | 5 | 5 | 2,400 | 200 | 1 | 70 |

# Table 2. Summary of Chromium and Selected VOC Concentrations in Groundwater Samples—Fall 2012 (in µg/L) [a]

| Well Group | Well | Chromium | TCE | PCE | CFC-11 | 1,1,1-TCA | 1,1-DCE | Cis-1,2-DCE |
|---|---|---|---|---|---|---|---|---|
| Troutdale Cont. | CPU-2 | 2.0 J | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | CPU-3D | 1.8 J | 0.50 U | 0.50 U | 0.50 U | 0.080 J | 0.50 U | 0.50 U |
| | CPU-10 | 1.0 UJ [b] | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | MW-33 | 3.2 J | **11** | 0.13 J | 0.13 J | 0.20 J | **1.4** | 2.4 |
| | MW-34 | 0.8 J | 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 |

NOTES:

Results in **bold** and shaded are at or above the established cleanup or guidance level for the compound.

[a] The concentrations listed in the table are the maximum of the normal and duplicate samples (as applicable).

[b] Well CPU-10 was sampled for both total and dissolved chromium due to elevated turbidity. The dissolved chromium results for more accurately reflect historical sample results and are reported in the table. The total chromium concentration was 23.2 µg/L.

* = Qualified as estimated based on field duplicate precision.
CFC-11 = Trichlorofluoromethane.
Cis-1,2-DCE = cis-1,2-Dichloroethene.
1,1-DCE = 1,1-Dichloroethene.
J = The result is an estimated concentration that is less than the Method Reporting Limit (MRL) but greater than or equal to the Method Detection Limit (MDL).
NA = The sample was not analyzed for the specified compound.
PCE = Tetrachloroethene.
1,1,1-TCA = 1,1,1-Trichloroethane.
TCE = Trichloroethene.
µg/L = Micrograms per liter.
U = The compound was analyzed for, but was not detected at or above the MRL/MDL.
UJ = The analyte was not detected; however, the detection limit is estimated due to discrepancies in QC criteria.

## Table 3. Wells with Analytical Results at or Above Cleanup Levels—Fall 2012

| Well Group [a] | Chromium (80 µg/L)[b] | TCE (5 µg/L)[b] | PCE (5 µg/L)[b] | 1,1-DCE (1 µg/L)[b] |
|---|---|---|---|---|
| Upgradient (6) | NR | NR | NR | NR |
| TCE Source (14) | NR | AMW-1A<br>AMW-2A<br>AMW-12A<br>AMW-53A<br>MW-1A | NR | NR |
| Proximal (12) | MW-2A<br>MW-4A<br>MW-4B<br>MW-10C | MW-6B<br>MW-10B<br>MW-13C | NR | NR |
| Intermediate (16) | MW-18D<br>MW-19D | AMW-17<br>AMW-18<br>AMW-59<br>AMW-64<br>CPU-14<br>MW-14C<br>MW-14E<br>MW-18D<br>MW-18E<br>MW-19D<br>MW-20D<br>MW-38<br>PZ-39 | NR | AMW-17<br>AMW-59<br>AMW-64<br>MW-14E<br>MW-18E<br>MW-19D<br>MW-20D<br>PZ-39 |
| Church of God (11) | NR | AMW-27<br>AMW-61<br>MW-21D<br>MW-22D | NR | MW-21D |
| Toe of Plume<br>Other Toe (3) | NR | MW-35 | NR | NR |
| Troutdale Aquifer (11) | NR | AMW-24<br>BENNETT<br>MW-33 | NR | AMW-24<br>BENNETT<br>MW-33 |

NOTES:

[a] Numbers in parentheses are the total number of wells sampled during the Fall 2012 sampling event.
[b] Site clean-up criteria established in the Record of Decision (EPA 2000).
1,1-DCE = 1,1-Dichloroethene.
PCE = Tetrachloroethene.
NR = None reported at or above the clean-up criteria.
NS = None sampled.
TCE = Trichloroethene.
µg/L = Micrograms per liter.

## Table 4. Summary of Chromium Concentrations, Spring 2011 Through Fall 2012

| Well Group | Well | Spring 2011 | Fall 2011 | Spring 2012 | Fall 2012 |
|---|---|---|---|---|---|
| Upgradient | AMW-6A | NS | NS | NS | 6.9 |
| | AMW-7A | NS | NS | NS | 2.9 J |
| | AMW-10A | NS | NS | NS | 18.7 |
| | AMW-11A | NS | NS | NS | 2.0 J |
| TCE Source (OU-2) | MW-1A | NS | NS | NS | 19.3 |
| Proximal | MW-2A | NS | **81.3** | NS | **190** |
| | MW-3A | NS | **342** | NS | 75.4 |
| | MW-4A | NS | **741** | NS | **362** |
| | MW-4B | NS | **617** | NS | **407** |
| | MW-6B | 50.9 | 18 | 48.1 | 17.8 |
| | MW-10B | 46.4 | 34.7 | 39.6 | 36.2 |
| | MW-10C | **99.9** | 70 | **116** | **93.6** |
| | PW-1B | 46.8 | 61.9 | 49.7 | 34.1 |
| Intermediate | MW-14C | **91.9** | 77 | 77.1 | 69.6 |
| | MW-14E | 57.1 | 48.3 | 42.1 | 41.1 |
| | MW-18D | **133** | **128** | **109** | **107** |
| | MW-19D | **140** | **126** | **113** | **102** |
| | MW-20D | 75.3 | 78.1 | 72.8 | 63.5 |
| | CPU-14 | NS | 41.4 | NS | 37.1 |
| Church of God | AMW-27 | **82.9 J** | 38.6 | 28.9 | 2.9 J |
| | CPU-13 | 18.8 | 18.4 | 19.5 | 16.4 |
| | MW-21D | 13.5 | 12.8 | 6.7 | 12 |
| | MW-22D | 44 | 35.9 | 28.5 | 25.4 |
| | MW-25D | 2.1 J | 5.0 U | 3.4 J | 2.7 J |
| | MW-26D | 7.6 | 10.7 | 6.6 | 11.7 |
| | MW-27D | NS | 5.7 | NS | 12.9 UJ |
| | MW-49 | 11.9 | 11.9 | 9.5 | 9.3 |
| Toe of Plume<br>Other Toe | AMW-42 | NS | NS | NS | 21.3 |
| | MW-31 | NS | NS | NS | 11.4 |
| | MW-35 | NS | 16.5 | NS | 16.5 UJ |
| Troutdale Aquifer | AMW-24 | NS | 3.5 J | NS | 8.8 |
| | AMW-25 | NS | NS | NS | 1.9 J |
| | AMW-50 | NS | NS | NS | 2.1 J |
| | AMW-51 | NS | NS | NS | 2.1 J |

## Table 4. Summary of Chromium Concentrations, Spring 2011 Through Fall 2012

| Well Group | Well | Spring 2011 | Fall 2011 | Spring 2012 | Fall 2012 |
|---|---|---|---|---|---|
| Troutdale Cont. | AMW-62 | NS | NS | NS | 1.5 J |
| | BENNETT | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| | CPU-10 | NS | NS | NS | 1.0 UJ* |
| | CPU-2 | NS | NS | NS | 2.0 J |
| | CPU-3D | NS | NS | NS | 1.8 J |
| | MW-33 | NS | 2.8 J | NS | 3.2 J |
| | MW-34 | NS | NS | NS | 0.8 J |

NOTES:

Only wells sampled for chromium during Fall 2012 are included in this table.
Results are in micrograms per liter (µg/L).
Results are for total chromium, unless otherwise noted.
Results shown in **bold** and shaded are at or above the cleanup level of 80 µg/L.
*Well CPU-10 was sampled for both total and dissolved chromium due to elevated turbidity. The dissolved chromium results for more accurately reflect historical sample results and are reported in the table. The total chromium concentration was 23.2 µg/L.

B or 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.
NS = Well not sampled during that monitoring event.
U = Analyte not detected above the specified reporting limit.
UJ = The analyte was not detected, but the associated limit of quantitation is estimated due to discrepancies in quality control criteria.

## Table 5. Summary of Trichloroethene Concentrations, Spring 2011 Through Fall 2012

| Well Group | Well | Spring 2011 | Fall 2011 | Spring 2012 | Fall 2012 |
|---|---|---|---|---|---|
| Upgradient | AMW-6A | NS | NS | NS | 0.42 J |
| | AMW-7A | NS | NS | NS | 0.24 J |
| | AMW-7A | NS | NS | NS | 0.24 J |
| | AMW-8A | NS | 0.50 | NS | 0.33 J |
| | AMW-10A | NS | NS | NS | 0.32 J |
| | AMW-11A | NS | NS | NS | 0.41 J |
| TCE Source (OU-2) | AMW-1A | 1.7 | **44** | **5.7** | **44** |
| | AMW-2A | **18.0** | **55** | **6.1** | **14** |
| | AMW-2B | NS | NS | NS | 0.4 J |
| | AMW-3A | NS | NS | NS | 0.48 J |
| | AMW-12A | **30** | **38** | **27** | **33** |
| | AMW-13A | NS | NS | NS | 0.17 J |
| | AMW-19A | NS | 1.5 | NS | 1.2 |
| | AMW-26 | NS | NS | NS | 0.52 |
| | AMW-52A | NS | NS | NS | 0.50 U |
| | AMW-53A | 0.86 | **6.0** | 1.8 | **12** |
| | AMW-54A | NS | NS | NS | 1.8 |
| | AMW-55A | NS | NS | NS | 1.3 |
| | AMW-56A | NS | NS | NS | 2.7 |
| | MW-1A | 4.8 | 5.2 | **6.1** | **6.1** |
| Proximal | AMW-58 | NS | NS | NS | 0.1 J |
| | MW-2A | NS | 1.7 | NS | 1.7 |
| | MW-3B | NS | NS | NS | 2.0 |
| | MW-4B | NS | 4.6 | NS | 4.2 |
| | MW-6B | 4.5 | 4.2 | 4.2 | **5.1** |
| | MW-8B | NS | NS | NS | 2.4 |
| | MW-9B | NS | NS | NS | 3.7 |
| | MW-10B | **21** | **18** | **16** | **16** |
| | MW-10C | 3.6 | 3.3 | 2.5 | 3.0 |
| | MW-12C | NS | NS | NS | 1.4 |
| | MW-13C | NS | NS | NS | **5.8** |
| | PW-1B | 3.1 | 2.9 | 2.6 | 3.1 |
| Intermediate | AMW-16 | NS | 1.6 | 0.17 J | 1.8 |
| | AMW-59 | NS | NS | NS | **92** |
| | MW-14C | **24** | **15** | **11** | **19 J** |
| | MW-14E | **83** | **78** | **72** | **67** |
| | MW-15E | **5.5** | **5.1** | 4.5 | 4.2 |

## Table 5. Summary of Trichloroethene Concentrations, Spring 2011 Through Fall 2012

| Well Group | Well | Spring 2011 | Fall 2011 | Spring 2012 | Fall 2012 |
|---|---|---|---|---|---|
| Intermediate Cont. | MW-16E | NS | NS | NS | 0.42 J |
| | MW-18D | **63** | **52** | **47** | **49** |
| | MW-18E | NS | **170** | NS | **170** |
| | MW-19D | **34** | **32** | **30** | **34** |
| | MW-20D | **50** | **58** | **47** | **45** |
| | MW-38 | **11** | **9.8** | NS | **7.4** |
| | CPU-14 | NS | **5.4** | NS | **5.2** |
| | PZ-39 | **56** | **56** | **56** | **54** |
| Northern Plume | AMW-17 | **29** | **140** | **160** | **210** |
| | AMW-18 | **75** | **68** | **52** | **39** |
| | AMW-64 | NS | NS | **160** | **110** |
| Church of God | AMW-27 | **15** | **14** | **12** | **6.8** |
| | AMW-61 | NS | NS | NS | **5.4** |
| | CPU-12 | NS | 3.5 | NS | 4.9 |
| | CPU-13 | 1.8 | 1.5 | 1.4 | 1.5 |
| | MW-21D | **7.3** | **6.2** | **5.4** | **5.3** |
| | MW-22D | **8.4** | **6.5** | **6.8** | **5.6** |
| | MW-23D | NS | 1.6 | NS | 1.4 |
| | MW-25D | 1.3 | 1.5 | 1.3 | 1.3 |
| | MW-26D | 0.79 | 0.72 | 0.76 | 0.84 |
| | MW-27D | NS | 0.63 | NS | 0.89 |
| | MW-49 | 1.7 | 1.4 | 1.4 | 1.1 |
| Toe of Plume Other Toe | AMW-42 | NS | NS | NS | 1.2 |
| | MW-31 | NS | NS | NS | 0.26 J |
| | MW-35 | NS | **5.4** | NS | **5.4** |
| Troutdale Aquifer | AMW-24 | NS | **12** | NS | **11** |
| | AMW-25 | NS | NS | NS | 0.5 U |
| | AMW-50 | NS | NS | NS | 0.5 U |
| | AMW-51 | NS | NS | NS | 0.24 J |
| | AMW-62 | NS | NS | NS | 0.5 U |
| | BENNETT | 4.0 | **6.2** | 3.8 | **6.9** |
| | CPU-10 | NS | NS | NS | 0.5 U |
| | CPU-2 | NS | NS | NS | 0.5 U |
| | CPU-3D | NS | NS | NS | 0.5 U |
| | MW-33 | NS | **13** | NS | **11** |
| | MW-34 | NS | NS | NS | 0.5 U |

## Table 5. Summary of Trichloroethene Concentrations, Spring 2011 Through Fall 2012

NOTES:

Only wells sampled for TCE during Fall 2012 are included in this table.
Results are in micrograms per liter (µg/L).
Results shown in **bold** and shaded are at or above the cleanup level of 5 µg/L.

| | | |
|---|---|---|
| B or 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. |
| NS | = | Well not sampled during that monitoring event. |
| TCE | = | Trichloroethene. |
| U | = | Analyte not detected above the specified reporting limit. |
| UJ | = | The analyte was not detected, but the associated limit of quantitation is estimated due to discrepancies in quality control criteria. |

## Table 6. Comparison of Chromium and VOC Concentrations for Environmental and Duplicate Groundwater Samples—Fall 2012

| Compound | Result (in µg/L) | MW-6B | AMW-2A | AMW-24 | AMW-56A | MW-13C | MW-14C | MW-21D | MW-27D |
|---|---|---|---|---|---|---|---|---|---|
| Total Chromium | Primary | 17.2 | NA | NA | NA | NA | 69.6 | 12.0 | 12.9 |
| | Duplicate | 17.2 | NA | NA | NA | NA | 69.6 | 11.3 | 12.2 |
| | RPD (%) | 0.0 | NA | NA | NA | NA | 0.0 | 6.0 | 5.6 |
| Trichlorofluoromethane (CFC-11) | Primary | 0.61 | 0.81 J | 0.14 J | 0.19 J | 0.50 U | 0.16 J | 0.32 J | 0.50 U |
| | Duplicate | 0.69 | 0.72 J | 0.14 J | 0.24 J | 0.50 U | 0.18 J | 0.32 J | 0.50 U |
| | RPD (%) | 12.3 | 11.8 | 0.0 | 23.3 | NC | 11.8 | 0.0 | NC |
| 1,1-Dichloroethene (1,1-DCE) | Primary | 0.50 U | 0.50 U | 1.6 | 0.50 U | 0.50 U | 0.12 J | 1.0 | 0.50 U |
| | Duplicate | 0.50 U | 0.11 J | 1.6 | 0.50 U | 0.50 U | 0.11 J | 1.0 | 0.50 U |
| | RPD (%) | NC | NC | 0.0 | NC | NC | 8.7 | 0.0 | NC |
| cis-1,2-Dichloroethene (cis-1,2-DCE) | Primary | 0.50 U | 0.50 U | 3.3 | 3.7 | 0.50 U | 0.50 U | 0.61 | 0.50 U |
| | Duplicate | 0.16 J | 0.50 U | 3.4 | 3.8 | 0.50 U | 0.15 J | 0.61 | 0.50 U |
| | RPD (%) | NC | NC | 3.0 | 2.7 | NC | NC | 0.0 | NC |
| 1,1,1-Trichloroethane (TCA) | Primary | 0.26 J | 0.53 | 0.37 J | 0.10 J | 0.13 J | 0.50 U | 0.20 J | 0.50 U |
| | Duplicate | 0.27 J | 0.49 J | 0.37 J | 0.12 J | 0.13 J | 0.090 J | 0.18 J | 0.50 U |
| | RPD (%) | 3.8 | 7.8 | 0.0 | 18.2 | 0.0 | NC | 10.5 | NC |
| 1,2-Dichloroethane (EDC) | Primary | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| | Duplicate | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.090 J |
| | RPD (%) | NC | NC | NC | NC | NC | NC | NC | NC |
| Trichloroethene (TCE) | Primary | 4.8 | 14 | 11 | 2.7 | 4.6 | 13 | 5.2 | 0.84 |
| | Duplicate | 5.1 | 14 | 11 | 2.7 | 5.8 | 19 | 5.3 | 0.89 |
| | RPD (%) | 6.1 | 0.0 | 0.0 | 0.0 | 23.1 | **37.5** | 1.9 | 5.8 |
| Tetrachloroethene (PCE) | Primary | 0.79 | 0.78 | 0.50 U | 0.40 J | 0.58 | 1.0 | 0.13 J | 0.50 U |
| | Duplicate | 0.78 | 0.80 | 0.50 U | 0.38 J | 0.67 | 1.2 | 0.13 J | 0.50 U |
| | RPD (%) | 1.3 | 2.5 | NC | 5.1 | 14.4 | 18.2 | 0.0 | NC |

NOTES:

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 = Not analyzed.
NC = Not calculable.
RPD = Relative percent difference.
U = Analyte was not detected above the specified method detection limit.
µg/L = Micrograms per liter.
VOC = Volatile organic compound.

# Appendix A

# Summary of Water Level Gauging Data and Groundwater Surface Elevations

# Appendix A. Summary of Water Level Gauging Data and Groundwater Surface Elevations, Fall 2012

| Well ID | Well Type | Total Depth (ft bgs) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | Screen Length (ft) | TOC Elevation (ft MSL) | Depth to Water (ft btoc) | Groundwater Surface Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| AMW-1A | M | 34.54 | 24.24 | 34.24 | 10 | 284.09 | 26.31 | 257.78 |
| AMW-1B | M | 56.49 | 46.49 | 56.49 | 10 | 284.11 | 26.58 | 257.53 |
| AMW-1C | M | 79 | 69 | 79 | 10 | 284.06 | 26.63 | 257.43 |
| AMW-2A | M | 34.2 | 24.2 | 34.2 | 10 | 284.03 | 26.39 | 257.64 |
| AMW-2B | M | 59 | 47 | 57 | 10 | 284.11 | 26.63 | 257.48 |
| RAMW-2C | M | 70.55 | 60.55 | 70.55 | 10 | 283.23 | 26.24 | 256.99 |
| AMW-3A | M | 34 | 24.5 | 34.5 | 10 | 283.92 | 25.73 | 258.19 |
| AMW-4A | M | 34.2 | 23.9 | 33.9 | 10 | 283.74 | 26.5 | 257.24 |
| AMW-5A | M | 34.5 | 24.5 | 34.5 | 10 | 284.14 | 24.12 | 260.02 |
| AMW-6A | M/D | 34 | 24 | 34 | 10 | 284.56 | 22.7 | 261.86 |
| AMW-7A | M/D | 34.09 | 24.25 | 34.25 | 10 | 285.02 | 21.4 | 263.62 |
| AMW-8A | M | 34.5 | 24.5 | 34.5 | 10 | 285.49 | 24.57 | 260.92 |
| AMW-9A | M | 34.5 | 24.5 | 34.5 | 10 | 283.92 | 24.73 | 259.19 |
| AMW-10A | M/D | 31.5 | 21.5 | 31.5 | 10 | 284.01 | 22.65 | 261.36 |
| AMW-11A | M/D | 33.84 | 24 | 34 | 10 | 283.21 | 20.68 | 262.53 |
| AMW-12A | M | 34.55 | 24.05 | 34.05 | 10 | 283.74 | 25.31 | 258.43 |
| AMW-13A | M | 34.3 | 23.8 | 33.8 | 10 | 283.88 | 26.57 | 257.31 |
| AMW-16 | M | 94.6 | 83.6 | 93.6 | 10 | 266.12 | 16.94 | 249.18 |
| AMW-17 | M/D | 92 | 81 | 91 | 10 | 261.87 | 10.5 | 251.37 |
| AMW-18 | M | 103.65 | 92.65 | 102.65 | 10 | 278.8 | 26.15 | 252.65 |
| AMW-19A | M | 35 | 25 | 35 | 10 | 283.94 | 25.25 | 258.69 |
| AMW-19B | M | 54.5 | 44.5 | 54.5 | 10 | 283.97 | 25.43 | 258.54 |
| AMW-20 | M | 35 | 25 | 35 | 10 | 283.69 | 24.09 | 259.60 |
| AMW-21 | M | 35 | 25 | 35 | 10 | 284.45 | 24.42 | 260.03 |
| AMW-23 | M | 85 | 75 | 85 | 10 | 278.26 | 37.02 | 241.24 |
| AMW-24 | M/D | 200 | 190 | 200 | 10 | 264.72 | 127.2 | 137.52 |
| AMW-25 | M/D | 225 | 215 | 225 | 10 | 282.94 | 134.75 | 148.19 |
| AMW-26 | M/D | 34.5 | 24.2 | 34.2 | 10 | 283.02 | 26.03 | 256.99 |
| AMW-42 | E | 99.5 | 84.5 | 99.5 | 15 | 255.88 | 22.79 | 233.09 |
| AMW-43 | M/D | 85 | 72 | 85 | 13 | 247.71 | 12.64 | 235.07 |

## Appendix A. Summary of Water Level Gauging Data and Groundwater Surface Elevations, Fall 2012

| Well ID | Well Type | Total Depth (ft bgs) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | Screen Length (ft) | TOC Elevation (ft MSL) | Depth to Water (ft btoc) | Groundwater Surface Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| AMW-44 | M/D | 81 | 71 | 81 | 10 | 247.82 | 11.44 | 236.38 |
| AMW-45 | M/D | 77 | 67 | 77 | 10 | 244.87 | 9.42 | 235.45 |
| AMW-50 | M/D | 195.19 | 185.19 | 195.19 | 10 | 282.78 | 139.48 | 143.30 |
| AMW-51 | M/D | 195.7 | 185.7 | 195.7 | 10 | 258.44 | 130.18 | 128.26 |
| AMW-52A | M | 34.55 | 24.55 | 34.55 | 10 | 280.4 | 23.84 | 256.56 |
| AMW-52C | M | 73.63 | 63.63 | 73.63 | 10 | 280.38 | 23.66 | 256.72 |
| AMW-53A | M | 32.2 | 22.2 | 32.2 | 10 | 281.05 | 24.4 | 256.65 |
| AMW-53B | M | 54.55 | 44.55 | 54.55 | 10 | 281.2 | 24.47 | 256.73 |
| AMW-53C | M | 74.21 | 64.21 | 74.21 | 10 | 281.41 | 24.72 | 256.69 |
| AMW-54A | M | 34.3 | 24.3 | 34.3 | 10 | 283.31 | 26.4 | 256.91 |
| AMW-54C | M | 74.74 | 64.74 | 74.74 | 10 | 283.12 | 26.47 | 256.65 |
| AMW-55A | M | 30.83 | 20.83 | 30.83 | 10 | 282.11 | 25.15 | 256.96 |
| AMW-55C | M | 68.45 | 58.45 | 68.45 | 10 | 282.71 | 25.98 | 256.73 |
| AMW-56A | M | 35.24 | 25.24 | 35.24 | 10 | 283.67 | 25.93 | 257.74 |
| AMW-56C | M | 67.4 | 57.4 | 67.4 | 10 | 283.67 | 25.95 | 257.72 |
| AMW-57 | M | 75.38 | 70.08 | 75.08 | 5 | 285.68 | 25.14 | 260.54 |
| AMW-58 | M | 114.73 | 109.43 | 114.43 | 5 | 280.08 | 57.36 | 222.72 |
| AMW-59 | M/D | 140.04 | 134.74 | 139.74 | 5 | 270.17 | 18.57 | 251.6 |
| AMW-60 | M | 109.5 | 104.2 | 109.2 | 5 | 266.45 | 14.93 | 251.52 |
| AMW-61 | M | 97.16 | 91.86 | 96.86 | 5 | 273.78 | 46.01 | 227.77 |
| AMW-62 | M/D | 196.03 | 185.73 | 195.73 | 10 | 258.78 | 130.33 | 128.45 |
| AMW-63 | M | 86.43 | 76.13 | 86.13 | 10 | 257.69 | 20.92 | 236.77 |
| AMW-64 | M | 98.7 | 88.4 | 98.4 | 10 | 266.13 | 14.7 | 251.43 |
| CPU-2 | M | 197.2 | 186.2 | 196.2 | 10 | 259.57 | 124.14 | 135.43 |
| CPU-3D | M/D | 219.38 | 212.38 | 217.38 | 5 | 246.77 | 130.87 | 115.90 |
| CPU-3S | M | 72.72 | 65.72 | 70.72 | 5 | 246.77 | 12.03 | 234.74 |
| CPU-4D | M | 210 | 203 | 208 | 5 | 234.05 | 128.64 | 105.41 |
| CPU-4S | M | 69.3 | 62.3 | 67.3 | 5 | 234.1 | 12.03 | 222.07 |
| CPU-10 | M | 197.9 | 186.9 | 196.9 | 10 | 261.24 | 126.57 | 134.67 |

## Appendix A. Summary of Water Level Gauging Data and Groundwater Surface Elevations, Fall 2012

| Well ID | Well Type | Total Depth (ft bgs) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | Screen Length (ft) | TOC Elevation (ft MSL) | Depth to Water (ft btoc) | Groundwater Surface Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| CPU-12 | M | 72.12 | 61.12 | 71.12 | 10 | 275.23 | 28.61 | 246.62 |
| CPU-13 | E | 82.7 | 71.7 | 81.7 | 10 | 278.99 | 45.9 | 233.09 |
| CPU-14 | M | 71.43 | 60.43 | 70.43 | 10 | 257.56 | 7.58 | 249.98 |
| CPU-15 | M | 89.49 | 78.49 | 88.49 | 10 | 295.87 | 33.24 | 262.63 |
| MW-1A | M | 38.56 | 28.36 | 38.26 | 9.9 | 285.49 | 28.61 | 256.88 |
| MW-1B | M | 59.79 | 54.49 | 59.49 | 5 | 285.47 | 28.64 | 256.83 |
| MW-1C | M | 77.44 | 72.14 | 77.14 | 5 | 285.45 | 28.63 | 256.82 |
| MW-2A | M | 37.39 | 32.09 | 37.09 | 5 | 282.57 | 26.77 | 255.80 |
| MW-2B | M | 57.94 | 52.64 | 57.64 | 5 | 282.49 | 26.81 | 255.68 |
| MW-2C | M | 86.94 | 81.64 | 86.64 | 5 | 282.43 | 27.03 | 255.40 |
| MW-3A | M | 32.64 | 22.34 | 32.34 | 10 | 280.21 | 24.96 | 255.25 |
| MW-3B | M | 56.69 | 51.39 | 56.39 | 5 | 280.33 | 25.25 | 255.08 |
| MW-3C | M | 83.69 | 78.39 | 83.39 | 5 | 280.35 | 25.4 | 254.95 |
| MW-4A | M | 37.11 | 26.81 | 36.81 | 10 | 280.3 | 25.23 | 255.07 |
| MW-4B | M | 45 | 39.7 | 44.7 | 5 | 280.15 | 25.15 | 255.00 |
| MW-4BSHED | M | 58.2 | 52.9 | 57.9 | 5 | 280.47 | 25.74 | 254.73 |
| MW-4C | M | 80 | 74.7 | 79.7 | 5 | 279.91 | 25.3 | 254.61 |
| MW-6A | M | 31.5 | 18.25 | 28.25 | 10 | 278.77 | 24.13 | 254.64 |
| MW-6B | E | 59 | 45.75 | 55.75 | 10 | 273.32 | 39.89 | 233.43 |
| MW-6C | M | 84.8 | 71.55 | 81.55 | 10 | 278.65 | 24.63 | 254.02 |
| MW-6D | M | 113.7 | 100.45 | 110.45 | 10 | 278.9 | 24.98 | 253.92 |
| MW-7B | M | 57.7 | 47 | 57 | 10 | 280.02 | 25.55 | 254.47 |
| MW-7C | M | 80.5 | 69 | 79 | 10 | 279.94 | 24.52 | 255.42 |
| MW-8B | M | 60 | 46.9 | 56.9 | 10 | 280.7 | 25.58 | 255.12 |
| MW-9B | M | 58 | 44.9 | 54.9 | 10 | 275.42 | 21.45 | 253.97 |
| MW-9C | M | 76.5 | 65 | 75 | 10 | 275.44 | 21.59 | 253.85 |
| MW-10B | E | 61.5 | 48 | 58 | 10 | 273.24 | 34.62 | 238.62 |
| MW-10C | E | 81.5 | 70 | 80 | 10 | 273.25 | 21.63 | 251.62 |
| MW-12C | M | 82.7 | 71.2 | 81.2 | 10 | 274.31 | 20.78 | 253.53 |

## Appendix A. Summary of Water Level Gauging Data and Groundwater Surface Elevations, Fall 2012

| Well ID | Well Type | Total Depth (ft bgs) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) | Screen Length (ft) | TOC Elevation (ft MSL) | Depth to Water (ft btoc) | Groundwater Surface Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|
| MW-13C | M | 76.53 | 65.03 | 75.03 | 10 | 271.97 | 18.34 | 253.63 |
| MW-14C | E | 81.5 | 70 | 80 | 10 | 271.22 | 24.08 | 247.14 |
| MW-14E | E | 126 | 115 | 125 | 10 | 268.95 | 32.03 | 236.92 |
| MW-15E | M | 107.23 | 96.23 | 106.23 | 10 | 265.73 | 13.71 | 252.02 |
| MW-16E | M | 110.69 | 99.69 | 109.69 | 10 | 258.35 | 6.4 | 251.95 |
| MW-17E | M | 110.9 | 99.9 | 109.9 | 10 | 259.32 | 7.83 | 251.49 |
| MW-18E | M/D | 123.57 | 112.57 | 122.57 | 10 | 261.77 | 9.79 | 251.98 |
| MW-20D | E | 87 | 76 | 86 | 10 | 269.43 | 45.65 | 223.78 |
| MW-21D | E | 67 | 56 | 66 | 10 | 265.98 | 32 | 233.98 |
| MW-22D | E | 65.2 | 54 | 64 | 10 | 269.02 | 31.23 | 237.79 |
| MW-23D | M | 87.4 | 76.2 | 86.2 | 10 | 265.33 | 18.4 | 246.93 |
| MW-25D | E | 79.05 | 67.85 | 77.85 | 10 | 272.13 | 34 | 238.13 |
| MW-26D | E | 94.2 | 83 | 93 | 10 | 272.86 | 45.99 | 226.87 |
| MW-27D | E | 72.3 | 61.1 | 71.1 | 10 | 273.22 | 29.45 | 243.77 |
| MW-30 | M/D | 63 | 51 | 61 | 10 | 246.75 | 11.56 | 235.19 |
| MW-31 | E | 85 | 75 | 85 | 10 | 262.88 | 22.39 | 240.49 |
| MW-32 | M | 75 | 65 | 75 | 10 | 262.67 | 24.44 | 238.23 |
| MW-33 | M/D | 215 | 205 | 215 | 10 | 272.55 | 129.8 | 142.75 |
| MW-34 | M/D | 205 | 195 | 205 | 10 | 267.33 | 125.5 | 141.83 |
| MW-35 | E/M | 89 | 79 | 89 | 10 | 255.7 | 18.12 | 237.58 |
| MW-37 | E | 102 | 82 | 102 | 20 | 263.09 | 22.44 | 240.65 |
| MW-38 | M | 81.9 | 71.9 | 81.9 | 10 | 263.92 | 13.95 | 249.97 |
| MW-41 | E/M | 81.7 | 71.7 | 81.7 | 10 | 253.08 | 17.14 | 235.94 |
| MW-46 | E/M | 80.3 | 70 | 80 | 10 | 247.79 | 11.89 | 235.90 |
| MW-47 | M/D | 83 | 72.7 | 82.7 | 10 | 246.39 | 10.3 | 236.09 |
| MW-48 | E | 86.5 | 76.2 | 86.2 | 10 | 248.82 | 12.1 | 236.72 |
| PW-1B | E | 58 | 48 | 58 | 10 | 276.56 | 27.93 | 248.63 |
| PZ-1 | | 38.79 | 23.79 | 38.79 | 15 | 284.15 | 21.46 | 262.69 |
| PZ-2 | | 42.97 | 27.97 | 42.97 | 15 | 286.54 | 23.72 | 262.82 |

## Appendix A. Summary of Water Level Gauging Data and Groundwater Surface Elevations, Fall 2012

NOTES:

| | | |
|---|---|---|
| bgs | = | Below ground surface. |
| btoc | = | Below top of casing. |
| | = | 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. |
| | = | Piezometer. |
| | = | Top of casing. |

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

E

PZ

TOC

# Appendix B

# Groundwater Purge and Sampling Forms

# PDBS FIELD FORM

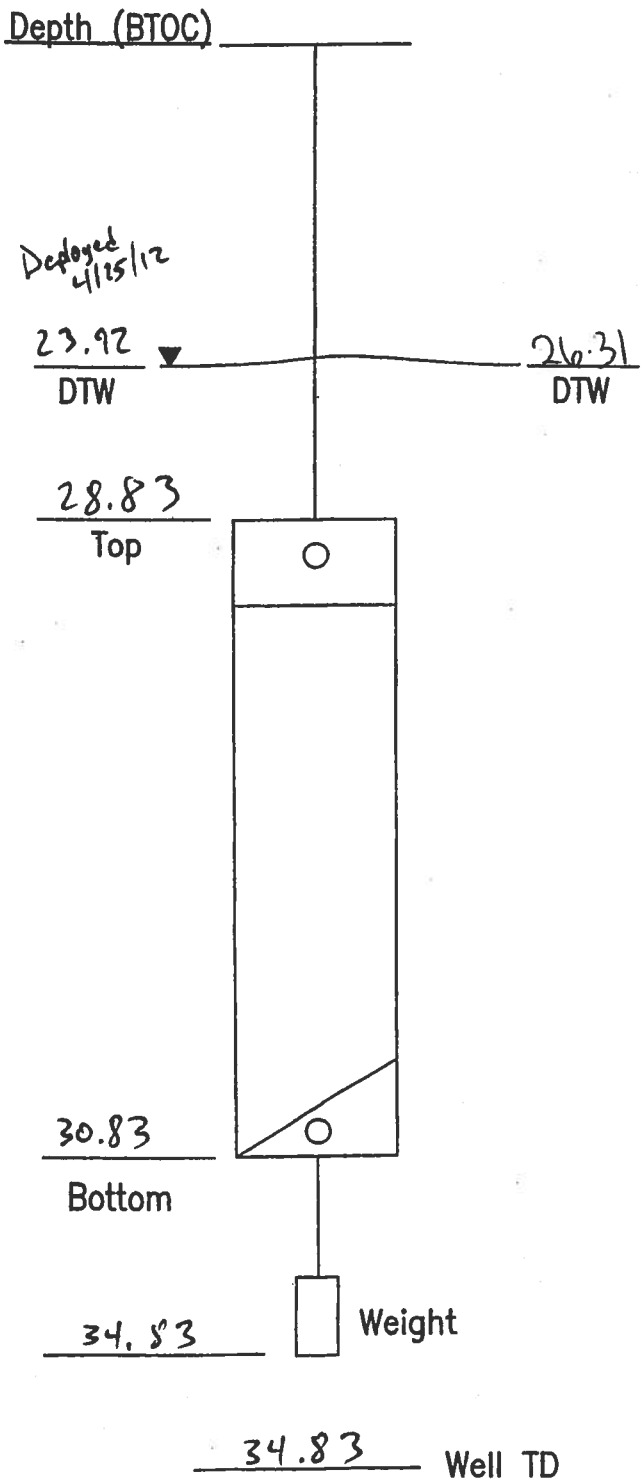
Well # AMW-1A

Well Diameter 2"

Installation Date 4/25/12

Installation Time 1410

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242038

Sample Time 0906

Sample Date 10/8/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, SY

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

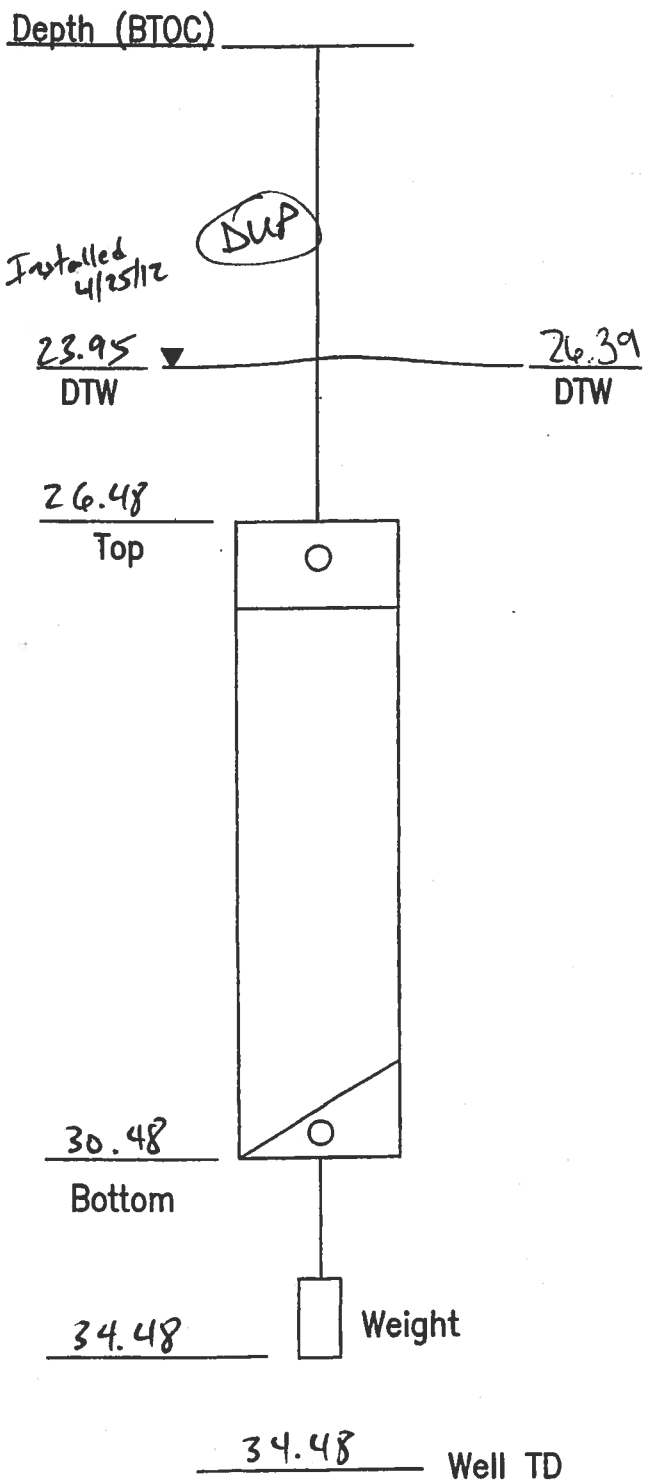
Well # AMW-2A

Well Diameter 2"

Installation Date 4/25/12

Installation Time 1430

Job# 14495.05.7012.0010




## SAMPLE INFORMATION

Sample No. 1242040
1242042 (dup)

Sample Time 1914
1919 (dup)

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

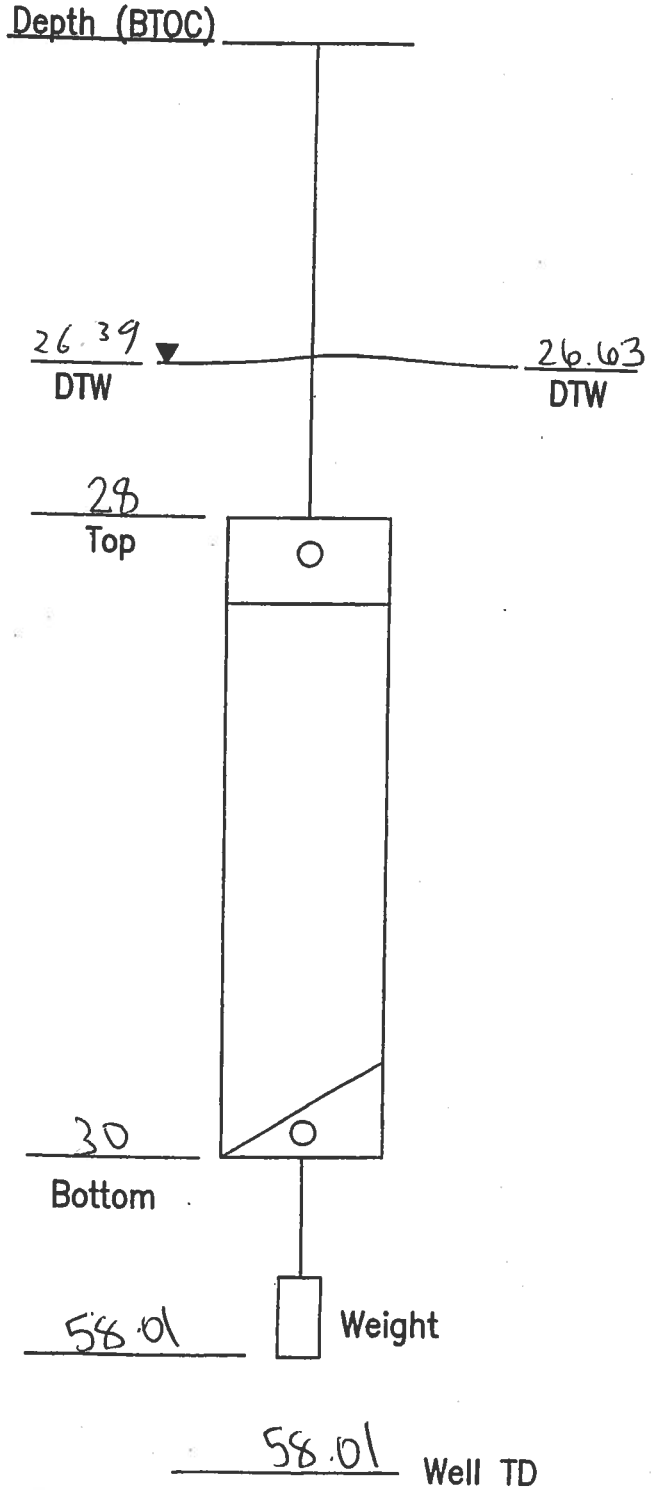
Well # AMW-26

Well Diameter 4"

Installation Date 10/1/12

Installation Time 14:15

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 12420044

Sample Time 0929

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) NDM

Other NA

Sampler: ST, RB, MB

DRAWING NAME: //projects/1204.0.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

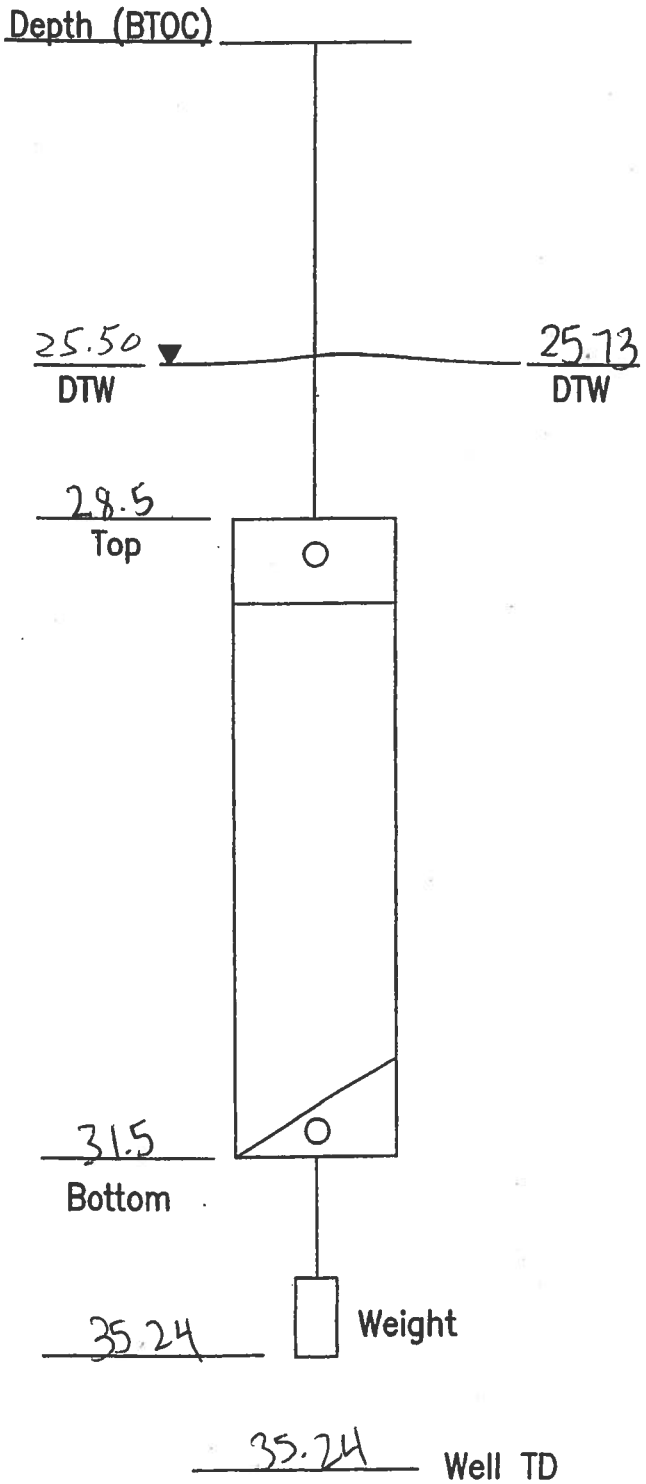
Well # AMW-3A

Well Diameter 4"

Installation Date 10/1/12

Installation Time 14:45

Job# 144905 2012 0010




## SAMPLE INFORMATION

Sample No. 1242054

Sample Time 1010

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-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) | — |
| Well Total Depth (ft btoc) | 33.87 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Sunny, Windy, ~59°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1320 | 1323 | 1326 | 1329 | 1332 | 1335 | 1338 | 1341 | | |
| Depth to Ground water (ft btoc) | 22.65 | 22.69 | 22.69 | 22.69 | 22.69 | 22.69 | 22.69 | 22.69 | | |
| Total Groundwater Purged (gallons, liters) | | 0.9 | 1.8 | 2.7 | 3.6 | 4.5 | 5.4 | 6.3 | | |
| Purge Rate (gpm, ft³/min, ml/min) | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | | |
| pH | | 7.21 | 7.23 | 7.26 | 7.29 | 7.32 | 7.33 | 7.33 | | |
| Conductivity (mS/cm) | | 0.187 | 0.177 | 0.173 | 0.172 | 0.174 | 0.172 | 0.171 | | |
| Turbidity (NTU) | | 0.95 | 0.39 | 0.23 | 0.40 | 0.33 | 0.25 | 0.25 | | |
| Disssolved Oxygen (mg/L) | | 6.87 | 6.81 | 6.80 | 6.82 | 7.14 | 7.17 | 7.16 | | |
| Temperature (°C) | | 16.3 | 17.0 | 17.4 | 17.6 | 17.6 | 17.6 | 17.7 | | |
| ORP/eH (mV) | | 138 | 133 | 130 | 137 | 140 | 143 | 143 | | |
| Color of Purged Water (gray, brown, red, clear) | | Clear | Clear | Clear | Clear | Clear | Clear | Clear | | |

Sample Identification: 1242016

Time Sampled: 1345

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-7A |
| 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) | — |
| Well Total Depth (ft btoc) | 34.09 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Sunny, ~57°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1418 | 1421 | 1424 | 1427 | 1430 | 1433 | 1436 | | | |
| Depth to Ground water (ft btoc) | 21.32 | 21.41 | — | 21.42 | — | 21.43 | 21.43 | | | |
| Total Groundwater Purged (gallons, liters) | | 1.28 | 2.55 | 3.83 | 5.10 | 6.38 | 7.65 | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 425 | 425 | 425 | 425 | 425 | 425 | 425 | | | |
| pH | | 7.01 | 6.91 | 6.84 | 6.77 | 6.72 | 6.71 | | | |
| Conductivity (mS/cm) | | 0.178 | 0.171 | 0.169 | 0.167 | 0.167 | 0.167 | | | |
| Turbidity (NTU) | | 0.28 | 0.17 | 0.21 | 0.19 | 0.27 | 0.19 | | | |
| Disssolved Oxygen (mg/L) | | 6.63 | 6.65 | 6.63 | 6.63 | 6.64 | 6.64 | | | |
| Temperature (°C) | | 15.8 | 16.0 | 16.1 | 16.2 | 16.6 | 16.5 | | | |
| ORP/eH (mV) | | 194 | 177 | 173 | 176 | 178 | 181 | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | | | |

Sample Identification: 1242018

Time Sampled: 1440

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

# PDBS FIELD FORM

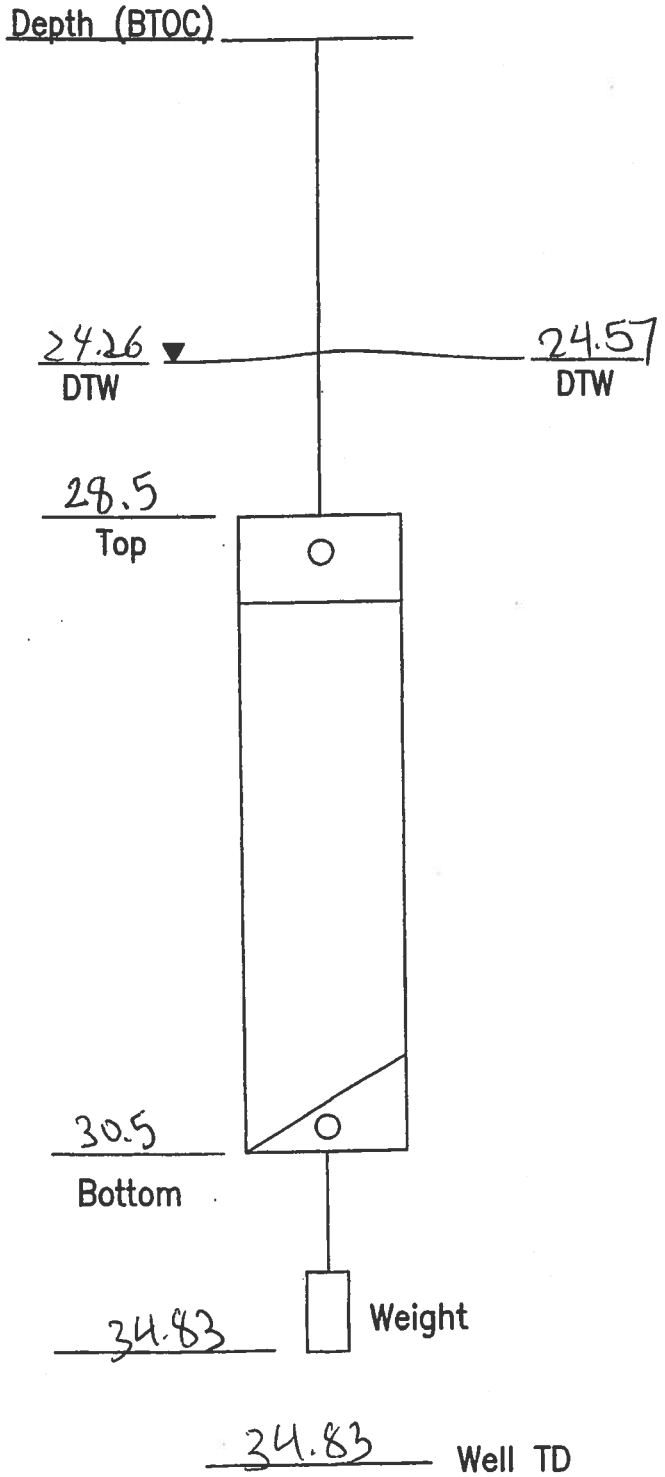
Well # AMW-8A

Well Diameter 4"

Installation Date 10/1/12

Installation Time 14:23

Job# 14495 05.2012 0010




## SAMPLE INFORMATION

Sample No. 12420056

Sample Time 1020

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen N/A

ORP N/A

pH N/A

Biofilm Present (Y/N) N

Other N/A

Samples: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-10A |
| 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) | 31.5 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Sunny, breeze, ~55°

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1027 | 1030 | 1033 | 1036 | 1039 | 1042 | 1045 | 1048 | 1111 | 1114 | 1117 |
| Depth to Ground water (ft btoc) | 22.61 | 22.84 | 23.04 | 23.09 | 23.14 | 23.17 | 23.21 | 23.35 | 23.40 | 23.41 | 23.4 |
| Total Groundwater Purged (gallons, liters) | | 1.35 | 2.7 | 3.45 | 4.2 | 4.8 | 5.4 | 6 | 6.60 | 7.2 | 7.8 |
| Purge Rate (gpm, ft³/min, ml/min) | 450 | 450 | 450 | 250 | 250 | 200 | 200 | 200 | 200 | 200 | 200 |
| pH | | 6.44 | 6.30 | 6.24 | 6.21 | 6.20 | 6.19 | 6.20 | 0.55 | 6.48 | 6.4 |
| Conductivity (mS/cm) | | 0.140 | 0.133 | 0.132 | 0.132 | 0.131 | 0.131 | 0.131 | 0.134 | 0.133 | 0.13 |
| Turbidity (NTU) | | 0.45 | 0.32 | 0.28 | 0.48 | 0.32 | 0.42 | 6.39 | 3.40 | 3.30 | 2.6 |
| Disssolved Oxygen (mg/L) | | 7.06 | 7.03 | 6.93 | 6.99 | 6.82 | 7.00 | 6.95 | 6.83 | 6.80 | 6.7 |
| Temperature (°C) | | 15.4 | 15.9 | 16.0 | 16.1 | 16.3 | 16.5 | 16.7 | 16.7 | 100.5 | 16.5 |
| ORP/eH (mV) | | 192 | 190 | 194 | 192 | 194 | 192 | 192 | 201 | 200 | 196 |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | clear | clear | clear | clear |

Sample Identification: 124B014

Time Sampled: 1120

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

@ 1049 turned off pump to allow for recovery

1104 DTW = 23.00'

1105 Resumed pumping

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-11A |
| 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) | — |
| Well Total Depth (ft btoc) | 33.84 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: MB/KB

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: Sunny, breeze, ~55°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0945 | 0948 | 0951 | 0954 | 0957 | 1000 | 1003 | | | |
| Depth to Ground water (ft btoc) | 20.64 | 20.66 | 20.660 | 20.660 | 20.66 | 20.65 | 20.65 | | | |
| Total Groundwater Purged (gallons, liters) | | 1.35 | 2.7 | 4.05 | 5.4 | 6.75 | 8.11 | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 450 | 450 | 450 | 450 | 450 | 450 | 450 | | | |
| pH | | 7.36 | 7.38 | 7.36 | 7.35 | 7.35 | 7.35 | | | |
| Conductivity (mS/cm) | | 0.223 | 0.197 | 0.183 | 0.182 | 0.178 | 0.176 | | | |
| Turbidity (NTU) | | 0.36 | 0.27 | 0.23 | 0.24 | 0.22 | 0.22 | | | |
| Disssolved Oxygen (mg/L) | | 6.87 | 6.88 | 6.89 | 6.86 | 6.90 | 6.85 | | | |
| Temperature (°C) | | 16.9 | 16.8 | 16.7 | 16.7 | 16.7 | 16.8 | | | |
| ORP/eH (mV) | | 156 | 153 | 151 | 144 | 143 | 145 | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | | | |

Sample Identification: 121012

Time Sampled: 1010

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

# PDBS FIELD FORM

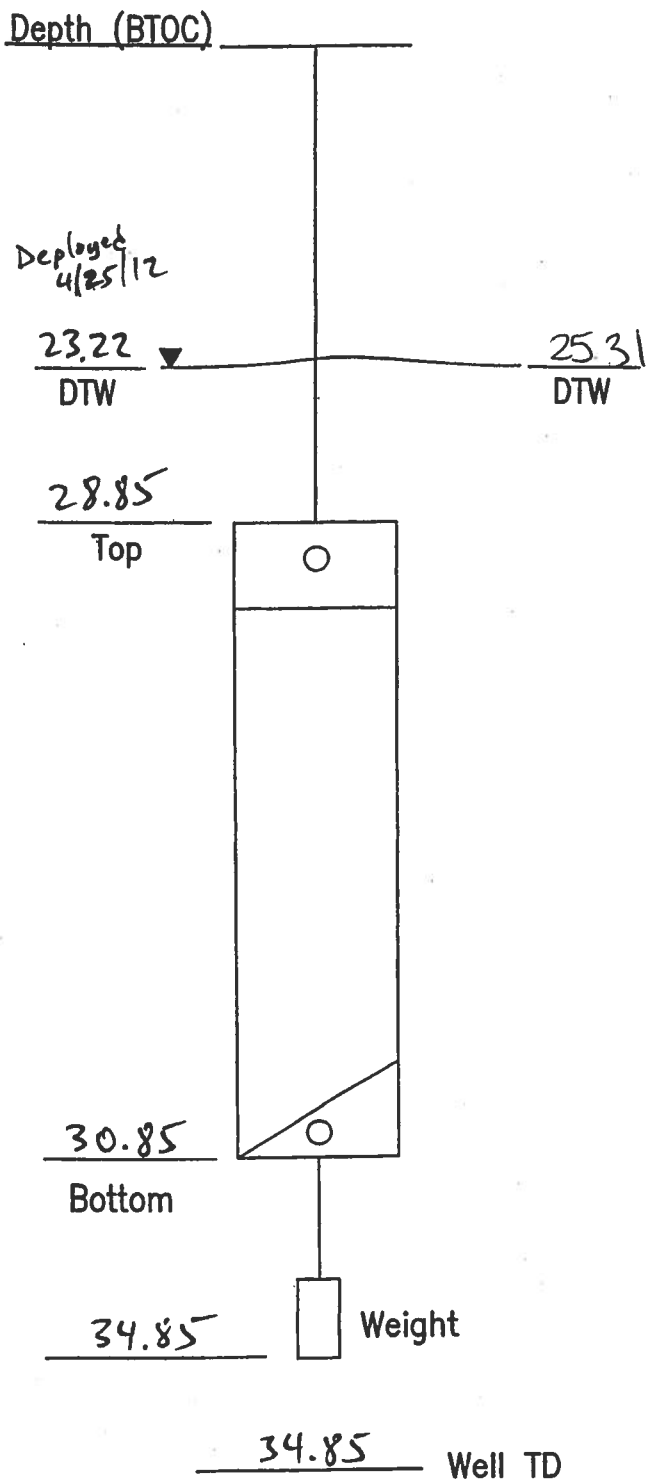
Well # A MW-12A

Well Diameter 4"

Installation Date 4/25/12

Installation Time 1445

Job# 14495.05.2012.6010




## SAMPLE INFORMATION

Sample No. 12412050

Sample Time 0950

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen MA

ORP MA

pH MA

Biofilm Present (Y/N) N

Other MA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

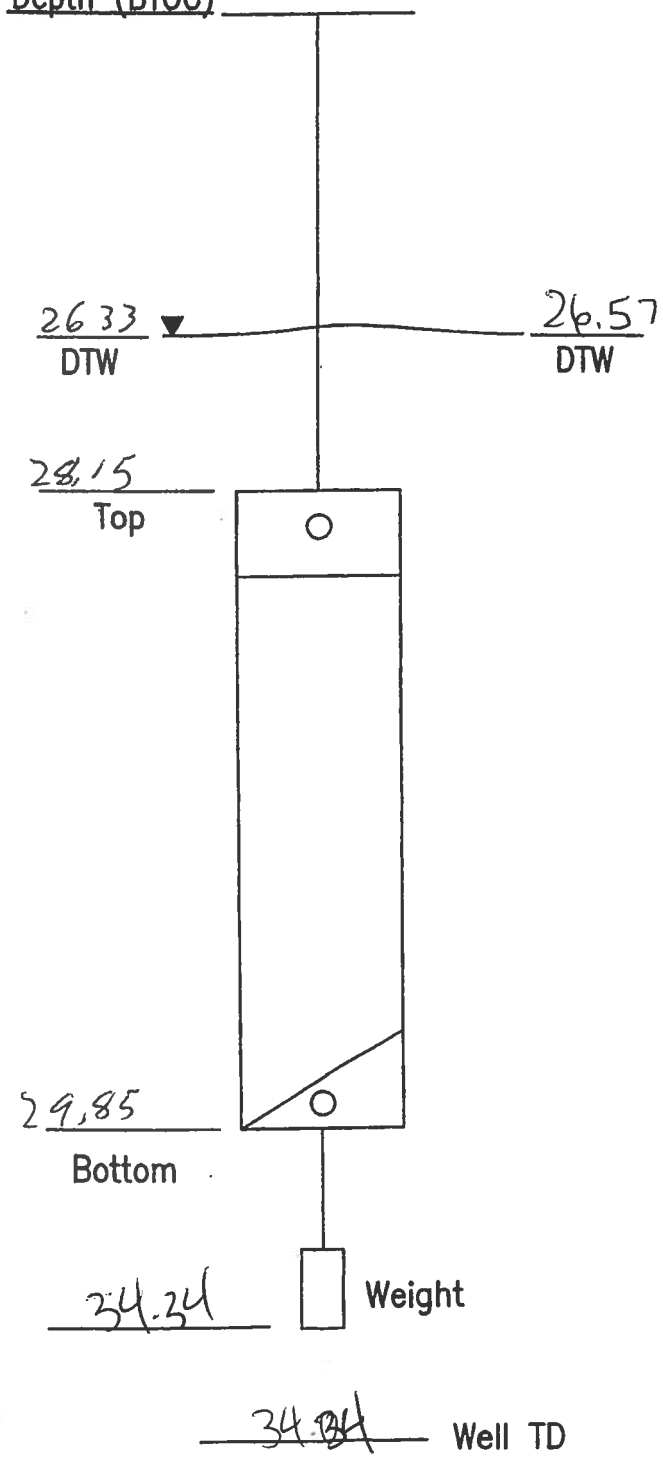
Well # AMW-13A

Well Diameter 4"

Installation Date 10/01/12

Installation Time 2:05

Job# 14495.05.2012.5010




## SAMPLE INFORMATION

Sample No. 1242034

Sample Time 0852

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, SJ

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

Well # AMW-16

Well Diameter 4"

Installation Date 4/25/12

Installation Time 1000

Job# 14495.05

Depth (BTOC)

Deployed new 4/25/12

13.44 DTW ▼ — 16.92 DTW

87.28 Top

89.28 Bottom

91.28 Weight

91.28 Well TD

## SAMPLE INFORMATION

Sample No. 1242061

Sample Time 1047

Sample Date 10/15/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples: RR.ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-17 |
| 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) | 92 |

Site Location: Boomsnub (Fall 2012) Date: 10/17/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Sunny . ~61°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1632 | 1635 | 1638 | 1641 | 1644 | 1647 | 1650 | 1653 | 1656 | 1659 |
| Depth to Ground water (ft btoc) | 10.33 | 10.35 | 10.38 | 10.39 | 10.39 | 10.40 | 10.40 | 10.40 | 10.40 | 10.40 |
| Total Groundwater Purged (gallons, liters) | | 0.6 | 1.2 | 1.8 | 2.4 | 3 | 3.6 | 4.2 | 4.8 | 5.4 |
| Purge Rate (gpm, ft³/min, ml/min) | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| pH | | 6.67 | 6.47 | 6.36 | 6.30 | 6.23 | 6.17 | 6.12 | 6.08 | 6.04 |
| Conductivity (mS/cm) | | 0.161 | 0.162 | 0.159 | 0.158 | 0.157 | 0.155 | 0.155 | 0.154 | 0.153 |
| Turbidity (NTU) | | 0.51 | 0.19 | 0.07 | 0.05 | 0.06 | 0.05 | 0.07 | 0.10 | 0.08 |
| Disssolved Oxygen (mg/L) | | 2.64 | 1.52 | 1.21 | 0.98 | 0.85 | 0.76 | 0.67 | 0.59 | 0.55 |
| Temperature (°C) | | 15.2 | 15.1 | 15.1 | 15.1 | 14.9 | 14.9 | 14.7 | 14.7 | 14.6 |
| ORP/eH (mV) | | 240 | 242 | 240 | 235 | 230 | 225 | 218 | 211 | 208 |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | clear | clear | clear |

Sample Identification: 1842032

Time Sampled: 1705

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

0 Total Chromium by 200.7

Comments: slow flow rate used.

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-18 |
| 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) | 103.65 |

Site Location: Boomsnub (Fall 2012) Date: 10/23/12

Project Number: 1449505 2012 0010 Personnel: MB, RE

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well __X__Redi-flo Pump (#1 ~~Bad~~) ___Other

Sampling Equipment: ___Extraction Well __X__Redi-flo Pump ___Diffusion Bag

Weather Conditions: Overcast, 50's

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1533 | 1536 | 1539 | 1542 | 1545 | 1548 | 1551 | | | |
| Depth to Ground water (ft btoc) 26.07 | 26.28 | 26.20 | 26.20 | 26.20 | 26.20 | 26.20 | 26.20 | | | |
| Total Groundwater Purged (gallons, liters) | 1.2 | 2.4 | 3.6 | 4.8 | 5.0 | 6.2 | 7.4 | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 400 | → | → | → | → | → | → | | | |
| pH | 6.93 | 6.60 | 6.48 | 6.45 | 6.44 | 6.44 | 6.43 | | | |
| Conductivity (mS/cm) | .157 | .159 | .163 | .166 | .165 | .164 | .162 | | | |
| Turbidity (NTU) | 10.8 | 9.4 | 9.2 | 9.6 | 9.4 | 7.6 | 7.2 | | | |
| Disssolved Oxygen (mg/L) | 1.87 | 0.74 | 0.53 | 0.56 | 0.58 | 0.59 | 0.57 | | | |
| Temperature (°C) | 12.7 | 12.6 | 12.8 | 13.0 | 13.1 | 13.2 | 13.4 | | | |
| ORP/eH (mV) | 69 | 126 | 121 | 131 | 134 | 134 | 133 | | | |
| Color of Purged Water (gray, brown, red, clear) | clear. | → | → | → | → | → | → | | | |

Sample Identification: 1243012

Time Sampled: 1600

# of bottles/analysis

3 VOCs by 8260C

___ Total Chromium by 200.7

Comments: Pump placed @ 97.6' btoc

Purge water disposed To: Boomsnub

# PDBS FIELD FORM

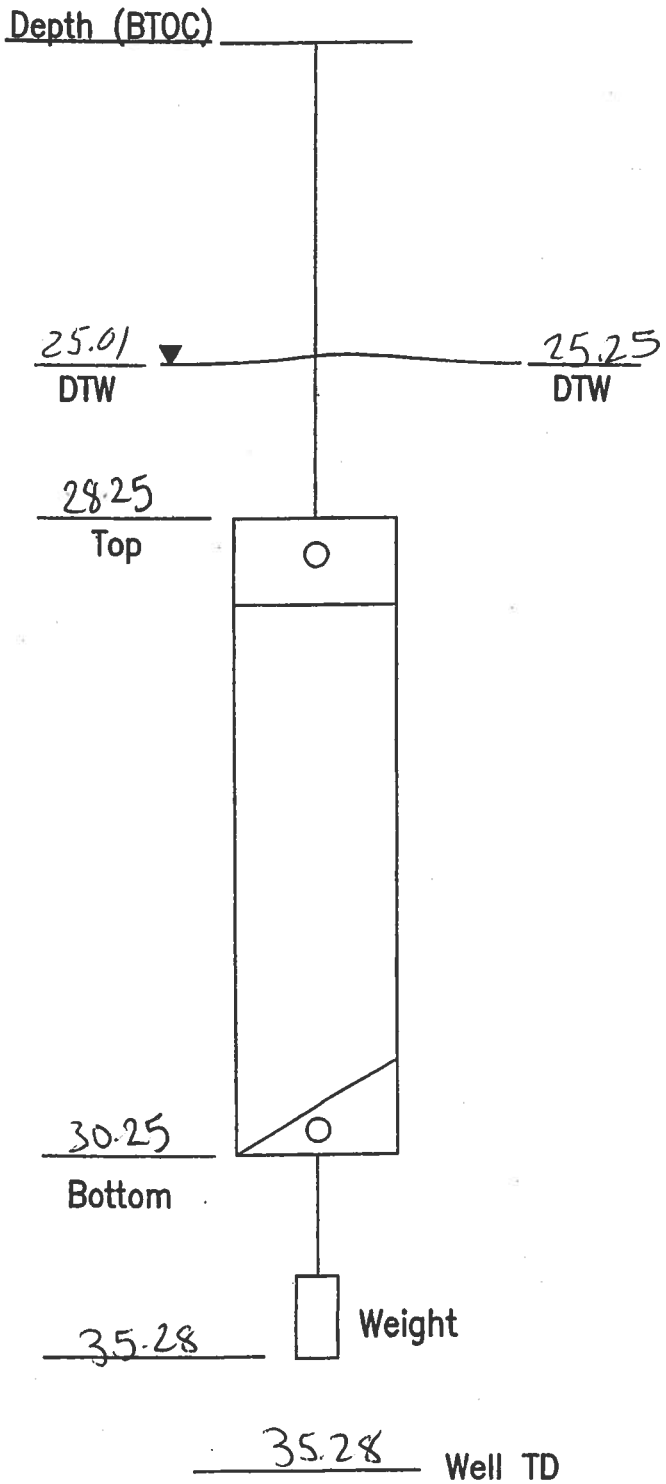
Well # AMW-19A

Well Diameter 4"

Installation Date 10/1/12

Installation Time 14:35

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242052

Sample Time 1000

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-24 |
| 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) | 200 |

Site Location: Boomsnub (Fall 2012) Date: 10/17/12

Project Number: 1449505 2012 0010 Personnel: RB/MB

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: Sunny, ~48°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1123 | 1126 | 1129 | 1132 | 1135 | 1138 | 1141 | 1144 | 1147 | |
| Depth to Ground water (ft btoc) | 127.48 | 127.58 | 127.57 | 127.57 | 127.57 | 127.56 | 127.55 | 127.55 | 127.54 | |
| Total Groundwater Purged (gallons, liters) | | 0.9 | 1.8 | 2.7 | 3.6 | 4.5 | 5.4 | 6.3 | 7.2 | |
| Purge Rate (gpm, ft³/min, ml/min) | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | |
| pH | | 7.03 | 6.93 | 6.91 | 6.90 | 6.89 | 6.91 | 6.92 | 6.93 | |
| Conductivity (mS/cm) | | 0.138 | 0.138 | 0.137 | 0.137 | 0.137 | 0.137 | 0.137 | 0.137 | |
| Turbidity (NTU) | | 0.39 | 0.34 | 0.35 | 0.39 | 0.39 | 0.360 | 0.40 | 0.49 | |
| Disssolved Oxygen (mg/L) | | 2.22 | 1.86 | 1.87 | 1.90 | 1.93 | 1.94 | 1.97 | 1.99 | |
| Temperature (°C) | | 12.4 | 12.5 | 12.7 | 12.8 | 13.0 | 13.2 | 13.2 | 13.2 | |
| ORP/eH (mV) | | 173 | 162 | 146 | 132 | 123 | 115 | 114 | 114 | |
| Color of Purged Water (gray, brown, red, clear) | | clear | Clear | Clear | Clear | clear | Clear | Clear | Clear | |

Sample Identification: 1242026 (1150)

Time Sampled: 1242028 (1200)

# of bottles/analysis

12 VOCs by 8260C

4 Total Chromium by 200.7

Comments:

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-25 |
| 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) | 225 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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, ~64°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1700 | 1703 | 1706 | 1709 | 1712 | 1715 | | | | |
| Depth to Ground water (ft btoc) | 134.49 | 134.72 | 134.71 | 134.72 | 134.73 | 134.73 | | | | |
| Total Groundwater Purged (gallons, liters) | | 1.35 | 2.7 | 4.05 | 5.4 | 6.75 | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 450 | 450 | 450 | 450 | 450 | 450 | | | | |
| pH | | 7.09 | 7.03 | 7.00 | 6.96 | 6.95 | | | | |
| Conductivity (mS/cm) | | 0.160 | 0.158 | 0.157 | 0.155 | 0.153 | | | | |
| Turbidity (NTU) | | 3.49 | 2.00 | 1.19 | 0.56 | 0.30 | | | | |
| Disssolved Oxygen (mg/L) | | 0.99 | 0.81 | 0.77 | 0.75 | 0.72 | | | | |
| Temperature (°C) | | 13.60 | 13.60 | 13.6 | 13.9 | 14.0 | | | | |
| ORP/eH (mV) | | 176 | 140 | 134 | 134 | 136 | | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | | | | |

Sample Identification: 1242008

Time Sampled: 1720

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Final DTW = 134.09'

Purge water disposed To: Boomsnub

# PDBS FIELD FORM

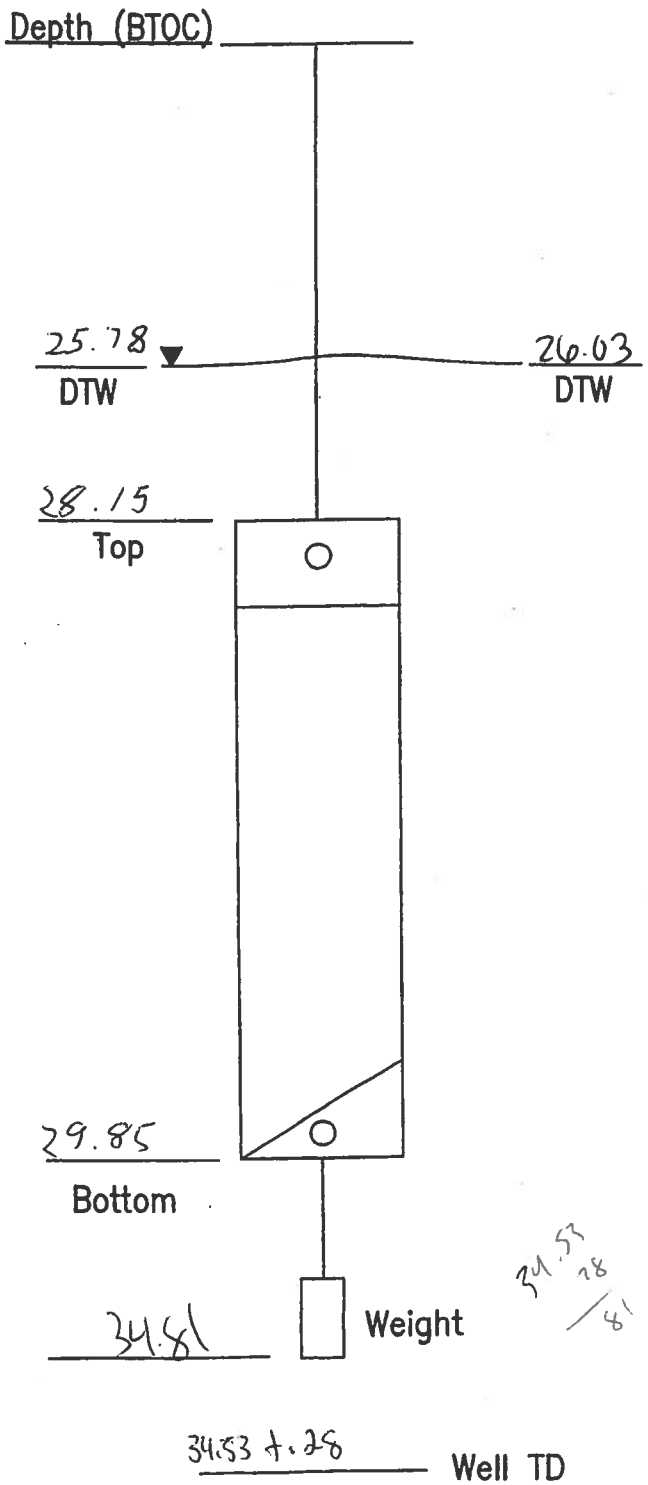
Well # AMW-26 ✱

Well Diameter 4"

Installation Date 10/1/12

Installation Time 2:10

Job# 14495.05 · 2012 0010




## SAMPLE INFORMATION

Sample No. 1242036

Sample Time 0900

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, RB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | Amw-27 |
| Well Diameter (inches) | 6 |
| Well Monument Locked and Good Condition? | Y-mon |
| 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) | 88 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: R. Reed, S. Titrom

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Clear, 57°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0928 | | | | | | | | | | |
| Depth to Ground water (ft btoc) | 32.45 | | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 1 | | | | | | | | | | |
| pH | 6.94 | | | | | | | | | | |
| Conductivity (mS/cm) | .331 | | | | | | | | | | |
| Turbidity (NTU) | 3.2 | | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 1.77 | | | | | | | | | | |
| Temperature (°C) | 15.9 | | | | | | | | | | |
| ORP/eH (mV) | 457 | 157 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | | |

Sample Identification: 124021

Time Sampled: 0931

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totzl25 5799280

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-34 |
| 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) | 205 |

Site Location: Boomsnub (Fall 2012) Date: 10/17/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Cloudy, partially sunny, ~46°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1049 | 1052 | 1055 | 1058 | 1101 | | | | | |
| Depth to Ground water (ft btoc) | 126.31 | 126.31 | 126.31 | 126.31 | 126.31 | | | | | |
| Total Groundwater Purged (gallons, liters) | 10.5 | 11.4 | 12.3 | 13.2 | 12.1 | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 300 | 300 | 300 | 300 | 300 | | | | | |
| pH | 6.72 | 6.73 | 6.73 | 6.74 | 6.75 | | | | | |
| Conductivity (mS/cm) | 0.147 | 0.147 | 0.147 | 0.147 | 0.147 | | | | | |
| Turbidity (NTU) | 0.18 | 0.15 | 0.13 | 0.10 | 0.10 | | | | | |
| Disssolved Oxygen (mg/L) | 0.53 | 0.51 | 0.49 | 0.47 | 0.45 | | | | | |
| Temperature (°C) | 13.1 | 13.2 | 13.2 | 13.1 | 13.3 | | | | | |
| ORP/eH (mV) | 79 | 88 | 94 | 98 | 102 | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | clear | clear | clear | clear | | | | | |

Sample Identification: 124202Y

Time Sampled: 1105

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-42 |
| Well Diameter (inches) | 6 |
| 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 (moist) |
| Well Casing Plug Locked and Good Condition? | Y |
| PID Reading in Well (ppm) | NA |
| Well Total Depth (ft btoc) | 99.5 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Raining, 64°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1428 | 1456 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 22.67 | 60 92 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | 0 | 117 | | | | | | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 4.5 | 4.5 | | | | | | | | | |
| pH | | 7.08 | | | | | | | | | |
| Conductivity (mS/cm) | | .197 | | | | | | | | | |
| Turbidity (NTU) | | 2 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | | 2.12 | | | | | | | | | |
| Temperature (°C) | | 13.4 | | | | | | | | | |
| ORP/eH (mV) | | ~~3.79~~ 148 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | | | | | | | | | |

Sample Identification: 124201

Time Sampled: 1456

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer: 8911373 (start)

899 8911490 (finish)

Turn on extraction well 1430

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-50 |
| 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) | 195.19 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Cloudy & 64°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1350 | 1353 | 1356 | 1359 | 1402 | 1405 | 1408 | 1411 | | |
| Depth to Ground water (ft btoc) | 137.10 | 137.11 | 137.11 | 137.10 | 137.10 | 137.10 | 137.10 | 137.10 | | |
| Total Groundwater Purged (gallons, liters) | | 1.2 | 2.4 | 3.6 | 4.8 | 6.0 | 7.2 | 8.4 | | |
| Purge Rate (gpm, ft³/min, ml/min) | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | | |
| pH | | 6.38 | 6.71 | 6.74 | 6.70 | 6.65 | 6.58 | 6.56 | | |
| Conductivity (mS/cm) | | 0.267 | 0.199 | 0.172 | 0.165 | 0.163 | 0.162 | 0.162 | | |
| Turbidity (NTU) | | 1.5 | 2.40 | 2.15 | 2.20 | 2.16 | 1.50 | 1.60 | | |
| Disssolved Oxygen (mg/L) | | 3.10 | 2.30 | 2.09 | 2.02 | 1.99 | 1.96 | 1.99 | | |
| Temperature (°C) | | 14.2 | 14.2 | 14.3 | 14.4 | 14.5 | 14.6 | 14.7 | | |
| ORP/eH (mV) | | 198 | 208 | 209 | 209 | 211 | 212 | 212 | | |
| Color of Purged Water (gray, brown, red, clear) | | Clear | Clear | Clear | Clear | Clear | Clear | Clear | | |

Sample Identification: 124002

Time Sampled: 1415

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Final DTW = 137.10'

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-51 |
| 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) | D |
| Well Casing Plug Locked and Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 195.7 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Partly cloudy, ~50°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1626 | 1629 | 1632 | 1635 | 1638 | 1641 | 1644 | | | |
| Depth to Ground water (ft btoc) 130.37 | 130.71 | 130.71 | 130.72 | 130.74 | 130.75 | 130.75 | 130.75 | | | |
| Total Groundwater Purged (gallons, liters) | 1.3 | 2.65 | 4.0 | 5.35 | 6.7 | 8.05 | 9.40 | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 450 | 450 | 450 | 450 | 450 | 450 | 450 | | | |
| pH | 7.29 | 7.32 | 7.31 | 7.31 | 7.30 | 7.32 | 7.30 | | | |
| Conductivity (mS/cm) | .161 | 0.161 | 0.160 | 0.160 | 0.160 | 0.160 | 0.160 | | | |
| Turbidity (NTU) | 24 | 10.5 | 6.6 | 3.9 | 2.5 | 1.8 | 1.3 | | | |
| Disssolved Oxygen (mg/L) | 1.84 | 1.42 | 1.40 | 1.36 | 1.32 | 1.28 | 1.24 | | | |
| Temperature (°C) | 12.9 | 12.8 | 13.2 | 13.7 | 14.0 | 14.3 | 14.3 | | | |
| ORP/eH (mV) | 228 | 197 | 144 | 121 | 113 | 110 | 109 | | | |
| Color of Purged Water (gray, brown, red, clear) | Clear | clear | Clear | clear | clear | clear | Clear | | | |

Sample Identification: 1242022

Time Sampled: 1650

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

# PDBS FIELD FORM

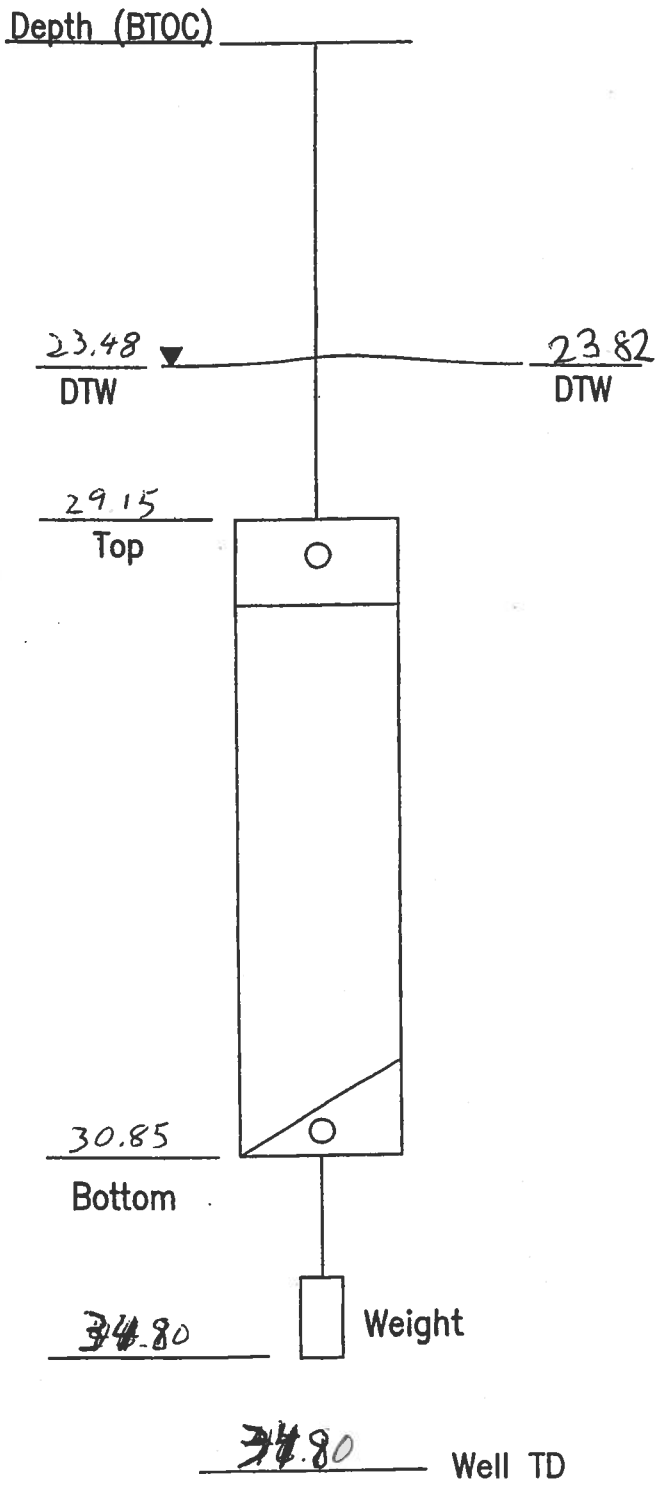
Well # AMW-52A

Well Diameter 4"

Installation Date 9/27/12

Installation Time 11:25

Job# 144505.7012.0018




## SAMPLE INFORMATION

Sample No. 1242047

Sample Time 1525

Sample Date 10/16/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples: ST, RR

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

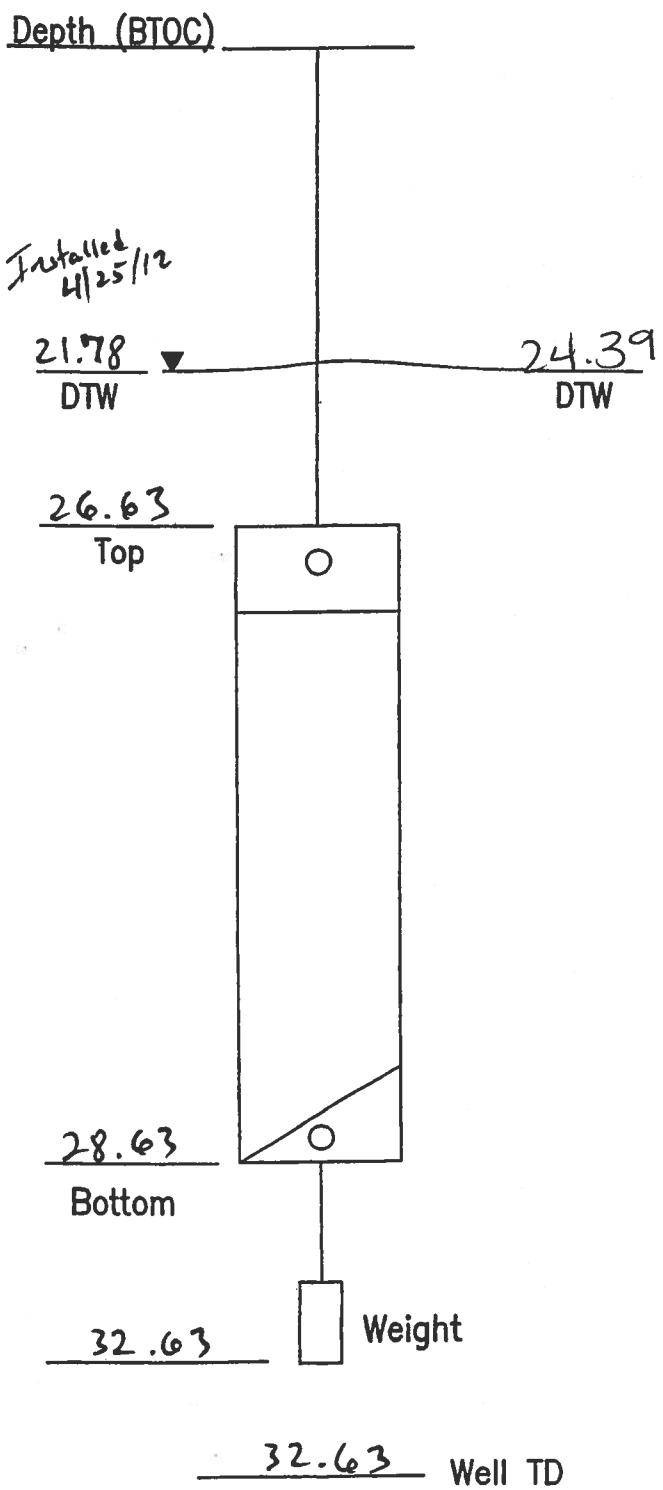
Well # AMW-53A

Well Diameter 4"

Installation Date 4/25/12

Installation Time 1045

Job# 14495.08.2012.0018




## SAMPLE INFORMATION

Sample No. 1242049

Sample Time 1540

Sample Date 10/16/12

Analysis 8260 C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: ST, RR

Reinstalled 10/16/12 1539

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

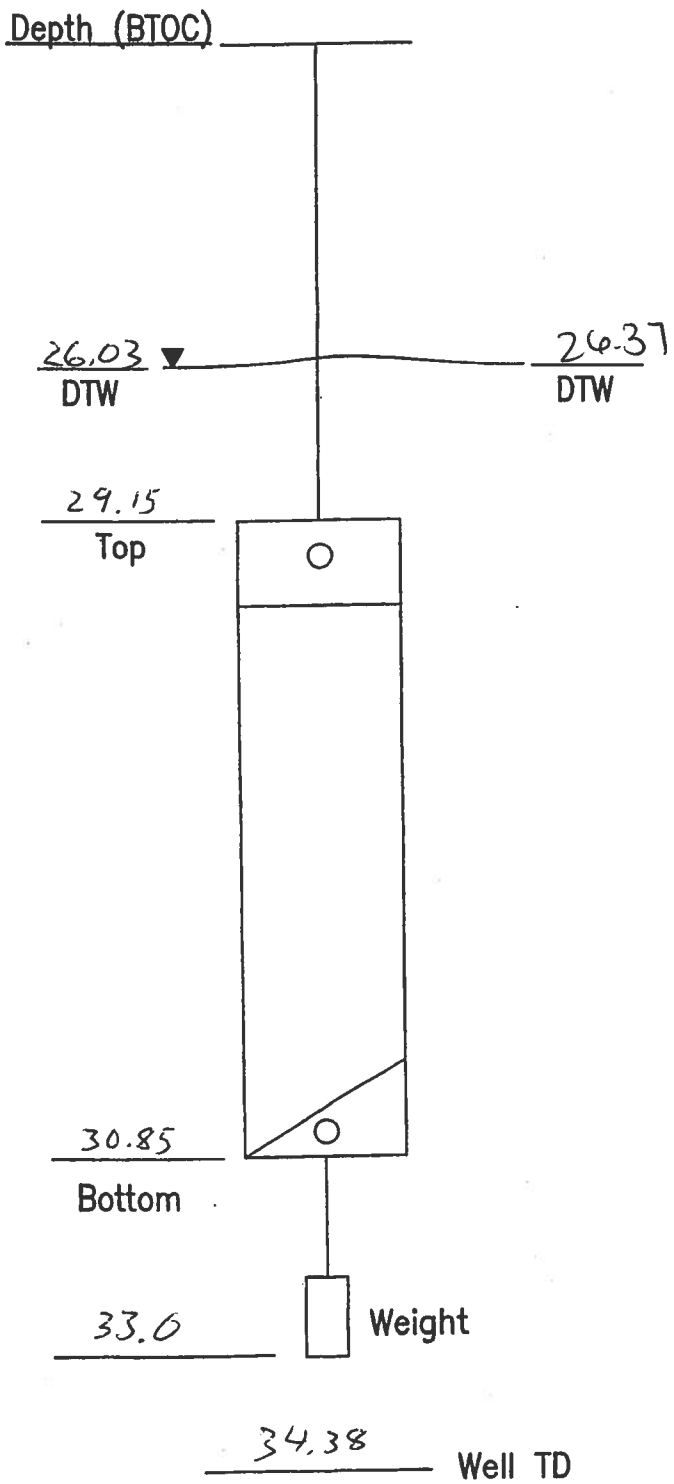
Well # AMW-54A

Well Diameter 4"

Installation Date 9/27/12

Installation Time 11:40

Job# 1449.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242051

Sample Time 1548

Sample Date 10/16/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: ST, RR

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

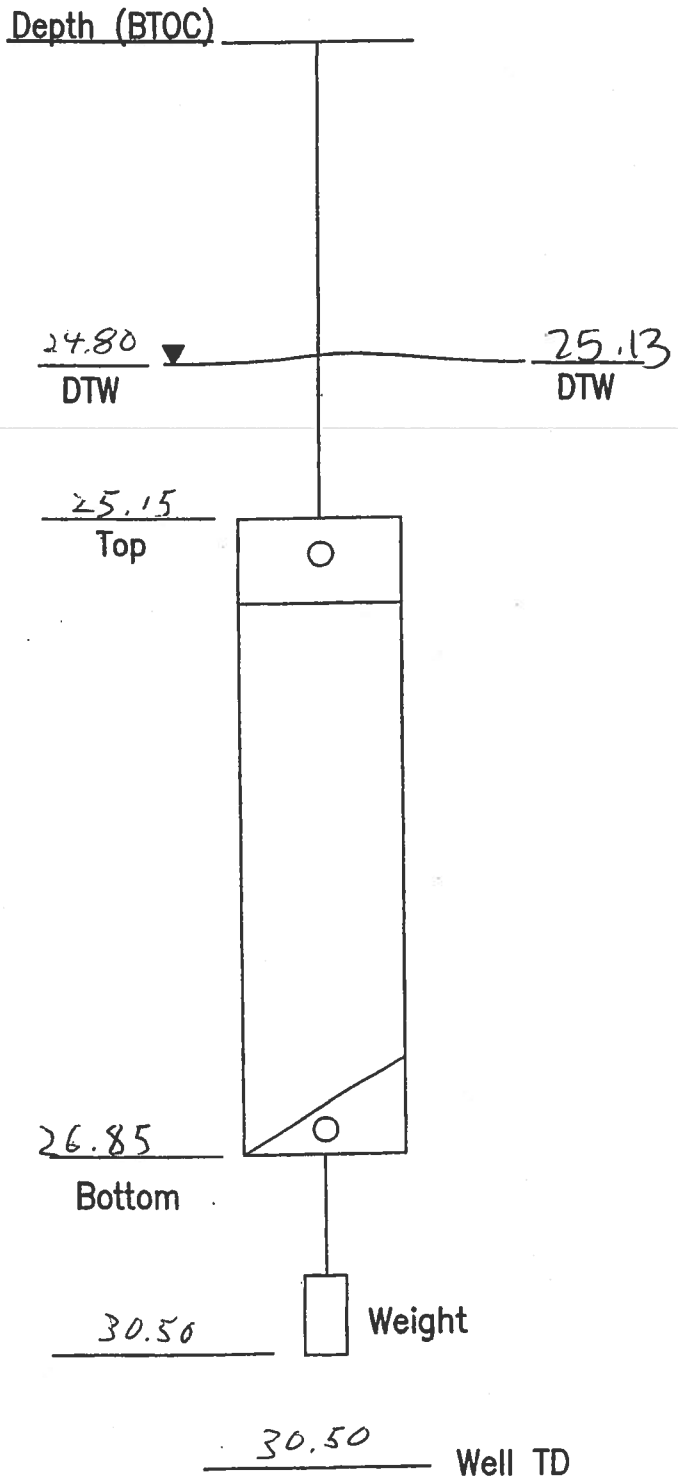
Well # AMW-55A

Well Diameter 4"

Installation Date 9/27/12

Installation Time 11:50

Job# 14495.01.2012.0010




## SAMPLE INFORMATION

Sample No. 1242053

Sample Time 1555

Sample Date 10/16/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Sampler: ST, RR

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

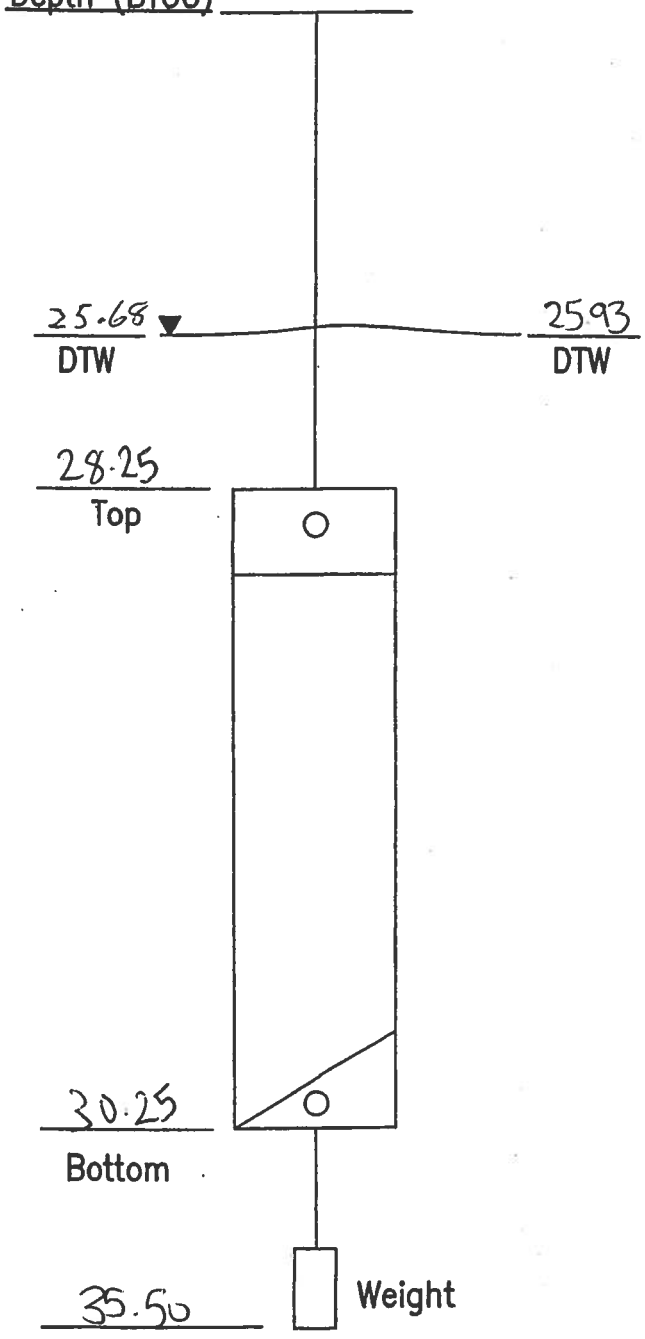
Well # AMW-56A

Well Diameter 2"

Installation Date 10/1/12

Installation Time 14:55

Job# 14495.05.202.001C




## SAMPLE INFORMATION

Sample No. 1242046
1242048 (dup)

Sample Time 0935
0940 (dup)

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Sampler: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

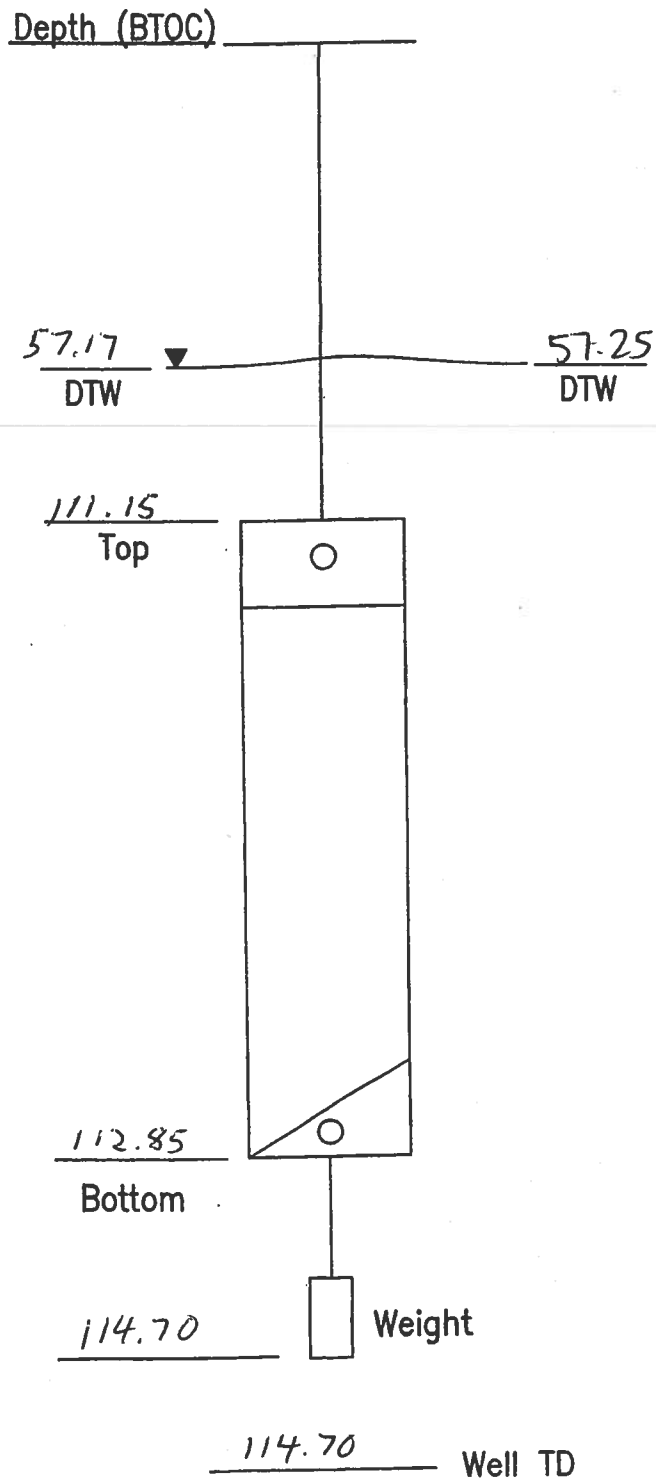
Well # AMW-58

Well Diameter 4"

Installation Date 9/27/12

Installation Time 10:45

Job# 144905 7012 0010




## SAMPLE INFORMATION

Sample No. 124206 7

Sample Time 1527

Sample Date 10/17/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples PR.ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

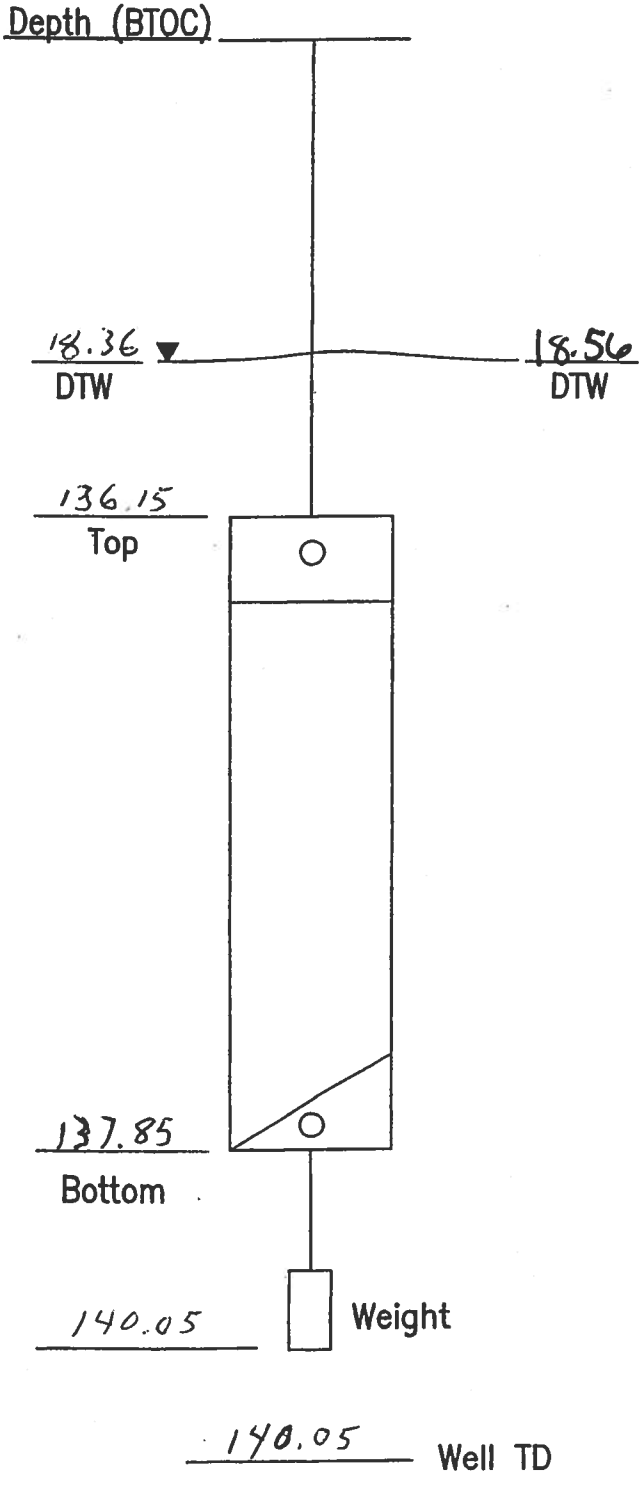
Well # AMW-59

Well Diameter 4"

Installation Date 9/28/12

Installation Time 11:30

Job# 14495.087.2012.0018




## SAMPLE INFORMATION

Sample No. 1242045

Sample Time 1515

Sample Date 10/16/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: ST, RR

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

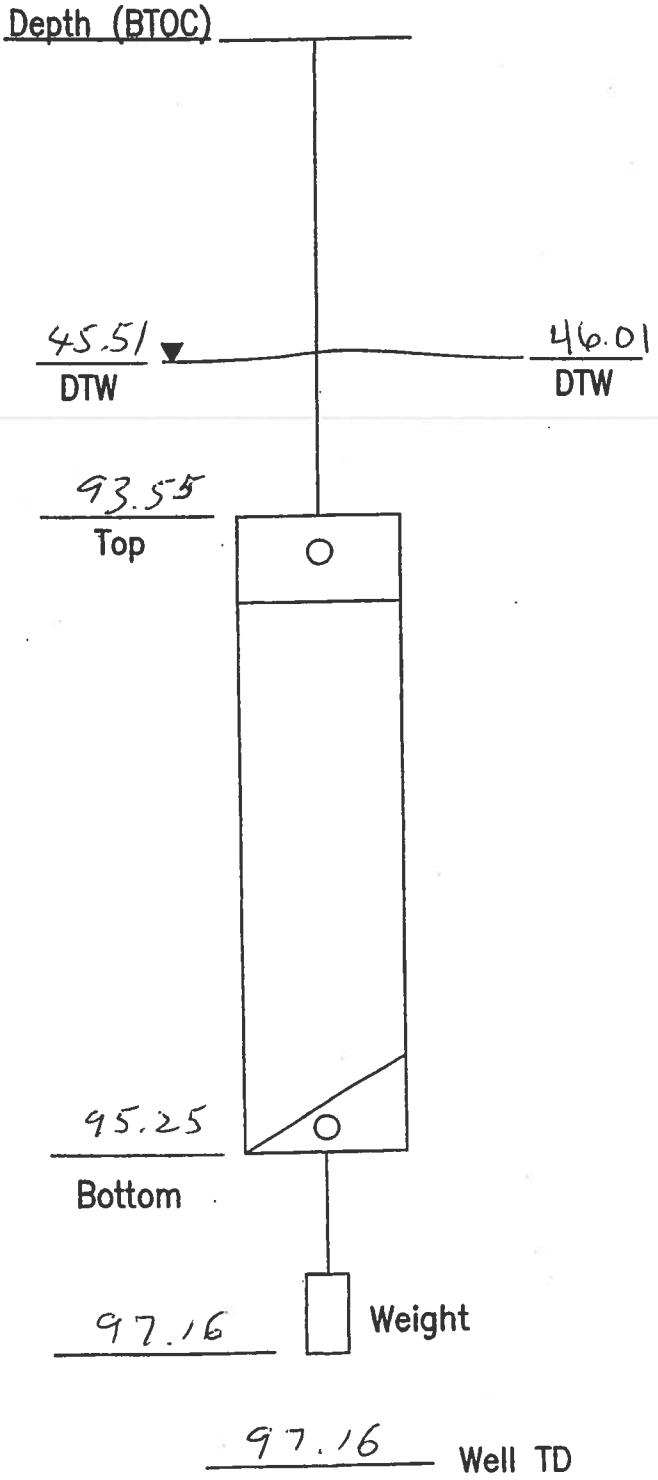
Well # AMW-61

Well Diameter 4"

Installation Date 9/28/12

Installation Time 14:15

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242072

Sample Time 1258

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-62 |
| 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) | 196.03 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: KB/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: Rainy, Cloudy, ~60°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1541 | 1544 | 1547 | 1550 | 1553 | 1556 | 1559 | 1602 | 1605 | 1608 |
| Depth to Ground water (ft btoc) | 130.13 | 131.00 | 130.83 | 130.77 | 130.75 | 130.73 | 130.72 | 130.71 | 130.71 | 130.71 |
| Total Groundwater Purged (gallons, liters) | | 1.05 | 2.1 | 3 | 3.9 | 4.8 | 5.7 | 6.6 | 7.5 | 8.4 |
| Purge Rate (gpm, ft³/min, ml/min) | 350 | 350 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| pH | | 7.14 | 7.13 | 7.12 | 7.12 | 7.13 | 7.13 | 7.15 | 7.17 | 7.19 |
| Conductivity (mS/cm) | | 0.162 | 0.162 | 0.162 | 0.162 | 0.162 | 0.162 | 0.162 | 0.162 | 0.162 |
| Turbidity (NTU) | | 1.20 | 0.64 | 0.63 | 0.25 | 0.65 | 0.35 | 0.32 | 0.12 | 0.12 |
| Disssolved Oxygen (mg/L) | | 0.44 | 0.68 | 0.57 | 0.55 | 0.55 | 0.55 | 0.56 | 0.54 | 0.50 |
| Temperature (°C) | | 13.3 | 13.5 | 13.7 | 13.9 | 14.0 | 14.1 | 14.2 | 14.2 | 14.2 |
| ORP/eH (mV) | | -12 | -4 | -4 | -10 | -24 | -33 | -44 | -51 | -53 |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | clear | clear | clear |

Sample Identification: 1242006

Time Sampled: 1610

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Final DTW = 129.55'

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | AMW-64 |
| 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) | 98.70 |

Site Location: Boomsnub (Fall 2012) Date: 10/23/12

Project Number: 1449505 2012 0010 Personnel: MB, RR

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well X Redi-flo Pump (#1 ~~Bad~~) ___Other

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

Weather Conditions: Overcast, 50's

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1352 | 1408 | 1411 | 1414 | 1417 | 1420 | 1423 | | | | |
| Depth to Ground water (ft btoc) | 15.23 | 15.31 | 15.43 | 15.50 | 15.75 | 15.86 | 15.89 | | | | |
| Total Groundwater Purged (gallons, ~~liters~~) | | 0.675 | 1.125 | 1.575 | 2.025 | 2.475 | 2.925 | | | | |
| Purge Rate (gpm, ft$^3$/min, ~~ml/min~~) | | 225 | 150 | 150 | → | → | → | | | | |
| pH | | 7.20 | 7.17 | 7.17 | 7.17 | 7.17 | 7.18 | | | | |
| Conductivity (mS/cm) | | .262 | .264 | .265 | .264 | .264 | .264 | | | | |
| Turbidity (NTU) | | 3.1 | 2.41 | 2.30 | 2.17 | 2.05 | 2.01 | | | | |
| Disssolved Oxygen (mg/L) | | 1.75 | 0.87 | 0.56 | 0.43 | 0.39 | 0.36 | | | | |
| Temperature (°C) | | 12.7 | 12.7 | 12.6 | 12.7 | 12.8 | 12.8 | | | | |
| ORP/eH (mV) | | -139 | -177 | -178 | -173 | -169 | -164 | | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | → | → | → | → | → | | | | |

Sample Identification: 124301l

Time Sampled: 1440

# of bottles/analysis

3 VOCs by 8260C

___ Total Chromium by 200.7

Comments: - Pump placed @ 93'6 btoc
- Cannot slow flow rate further. Drawdown >.3 ft.

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | Bennett |
| Well Diameter (inches) | 6 |
| 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) | 197 |

Site Location: Boomsnub (Fall 2012) Date: 10/17/12

Project Number: 1449505 2012 0010 Personnel:

Purge Method: ___Low Flow ___Conventional ___None X Other

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

Sampling Equipment: ___Extraction Well ___Redi-flo Pump ___Diffusion Bag X Other

Weather Conditions: Sunny ~57°

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1588 | 1530 | 1610 | | | | | | | | |
| Depth to Ground water (ft btoc) | 132.55 | | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | | | — | | | | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | | | — | | | | | | | | |
| pH | | | 6.65 | | | | | | | | |
| Conductivity (mS/cm) | | | 0.270 | | | | | | | | |
| Turbidity (NTU) | | | 0.23 | | | | | | | | |
| Disssolved Oxygen (mg/L) | | | 4.56 | | | | | | | | |
| Temperature (°C) | | | 12.7 | | | | | | | | |
| ORP/eH (mV) | | | 219 | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | | | clear | | | | | | | | |

Begin purging w/ hose into bushes

Sample Identification: 124030

Time Sampled: 1610

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Residential well

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | CPU-2 |
| Well Diameter (inches) | 2" |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 197.20 |

Site Location: Boomsnub (Fall 2012) Date: 10/22/12

Project Number: 1449505 2012 0010 Personnel: MB, 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 (Ded) ___Diffusion Bag

Weather Conditions: Overcast, scattered showers. 50's

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1630 | 1633 | 1636 | 1639 | 1642 | 1645 | 1648 | 1651 | | |
| Depth to Ground water (ft btoc) 123.87 | 127.18 | — | 126.47 | 126.44 | 126.45 | 126.47 | 126.47 | 126.47 | | |
| Total Groundwater Purged (gallons, liters) | 1.2 | 2.4 | 3.6 | 4.8 | 6.0 | 7.2 | 8.4 | 9.6 | | |
| Purge Rate (gpm, ft³/min, ml/min) | 400 | → | 250 | | | | | → | | |
| pH | 7.16 | 7.21 | 7.23 | 7.28 | 7.30 | 7.36 | 7.39 | 7.41 | | |
| Conductivity (mS/cm) | .158 | .162 | .162 | .161 | .160 | .159 | .158 | .157 | | |
| Turbidity (NTU) HF Scientific | 1.2 | 1.1 | 0.8 | 0.7 | 0.65 | 0.58 | 0.51 | 0.42 | | |
| Disssolved Oxygen (mg/L) | 1.41 | 0.34 | 0.23 | 0.18 | 0.18 | 0.24 | 0.26 | 0.28 | | |
| Temperature (°C) | 11.0 | 11.0 | 10.9 | 11.3 | 11.7 | 12.2 | 12.3 | 12.6 | | |
| ORP/eH (mV) | -273 | -265 | -258 | -246 | -242 | -233 | -228 | -227 | | |
| Color of Purged Water (gray, brown, red, clear) | clear | → | | | | | | → | | |

Sample Identification: 1243006

Time Sampled: 1658

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Dedicated pump.

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | CPU-30 |
| 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) | — |
| Well Total Depth (ft btoc) | 219.36 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: KB/MB

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: Cloudy, Rainy, ~64°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1449 | 1552 | 1555 | 1558 | 1501 | 1504 | 1507 | | | |
| Depth to Ground water (ft btoc) | 130.14 | 130.12 | 130.17 | 130.13 | 130.17 | 130.17 | 130.11 | | | |
| Total Groundwater Purged (gallons, liters) | | 1.5 | 3.0 | 4.5 | 6 | 7.5 | 9 | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 500 | 500 | 500 | 500 | 500 | 500 | 500 | | | |
| pH | | 6.94 | 6.88 | 6.81 | 6.76 | 6.72 | 6.70 | | | |
| Conductivity (mS/cm) | | 0.173 | 0.173 | 0.172 | 0.170 | 0.170 | 0.170 | | | |
| Turbidity (NTU) | | 1.23 | 0.91 | 0.74 | 0.47 | 0.50 | 0.35 | | | |
| Disssolved Oxygen (mg/L) | | 0.71 | 0.59 | 0.54 | 0.51 | 0.49 | 0.48 | | | |
| Temperature (°C) | | 12.2 | 12.2 | 12.4 | 12.7 | 13.0 | 13.3 | | | |
| ORP/eH (mV) | | 212 | 177 | 155 | 144 | 145 | 146 | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | | | |

Sample Identification: 12420004

Time Sampled: 1510

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Final DTW = 130.17'

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | CP4-10 |
| Well Diameter (inches) | 2 |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 198.22 |

Site Location: Boomsnub (Fall 2012) Date: 10/23/12

Project Number: 1449505 2012 0010 Personnel: MB, RL

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well X Redi-flo Pump (#1 ~~Bed~~) ___Other

Sampling Equipment: ___Extraction Well X Redi-flo Pump #1 ___Diffusion Bag

Weather Conditions: Overcast 50°F.

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0946 | 0949 | 0952 | 0955 | 0958 | 1001 | 1004 | 1007 | 1010 | 1013 |
| Depth to Ground water (ft btoc) 126.51 | 126.55 | 126.57 | 126.57 | 126.56 | 126.56 | 126.56 | 126.56 | 126.56 | 126.56 | 126.56 |
| Total Groundwater Purged (gallons, liters) | 1.05 | 2.1 | 3.15 | 4.2 | 5.25 | 6.3 | 7.35 | 8.4 | 9.45 | 10.5 |
| Purge Rate (gpm, ft³/min, ml/min) | 350 | → | | | | | | | | → |
| pH | 6.85 | 7.10 | 7.19 | 7.25 | 7.32 | 7.36 | 7.39 | 7.38 | 7.38 | 7.38 |
| Conductivity (mS/cm) | .303 | .230 | .174 | .160 | .161 | .161 | .159 | .159 | .158 | .158 |
| Turbidity (NTU) HF Scientific | 255 | 250 | 232 | 180 | 174 | 140 | 122 | 93 | 90 | 80 |
| Disssolved Oxygen (mg/L) | 1.81 | 0.71 | 0.51 | 0.44 | 0.31 | 0.29 | 0.27 | 0.30 | 0.31 | 0.31 |
| Temperature (°C) | 10.6 | 10.9 | 11.5 | 12.7 | 12.6 | 12.5 | 12.4 | 12.1 | 12.1 | 11.8 |
| ORP/eH (mV) | 149 | 124 | 117 | 102 | 96 | 88 | 84 | 77 | 74 | 72 |
| Color of Purged Water (gray, brown, red, clear) | cloudy | — | — | — | — | — | → | clear | — | → |

Sample Identification: 1243007 / Filtered 1243008

Time Sampled: 1030 / 1040

# of bottles/analysis

3 VOCs by 8260C

2 Total Chromium by 200.7

Comments:
- Pump placed @ 194' btoc
- Pump touched bottom of well, causing turbidity.

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | CPU-10 |
| Well Diameter (inches) | 2" |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 198.22 |

Site Location: Boomsnub (Fall 2012) Date: 10/23/12

Project Number: 1449505 2012 0010 Personnel: MB, RP

Purge Method: X Low Flow ___Conventional ___None

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

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

Weather Conditions: Overcast, 50 °F.

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1016 | 1019 | 1022 | 1025 | | | | | | | |
| Depth to Ground water (ft btoc) | 126.56 | 126.56 | 126.56 | 126.56 | | | | | | | |
| Total Groundwater Purged (gallons, liters) | 11.65 | 12.6 | 13.65 | 14.7 | | | | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 350 | → | → | → | | | | | | | |
| pH | 7.37 | 7.37 | 7.37 | 7.37 | | | | | | | |
| Conductivity (mS/cm) | .157 | .157 | .156 | .155 | | | | | | | |
| Turbidity (NTU) | 69 | 66 | 64 | 50 | | | | | | | |
| Disssolved Oxygen (mg/L) | 0.31 | 0.31 | 0.31 | 0.31 | | | | | | | |
| Temperature (°C) | 12.0 | 12.1 | 12.3 | 12.4 | | | | | | | |
| ORP/eH (mV) | 70 | 67 | 64 | 63 | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | → | → | → | | | | | | | |

Sample Identification: ~~1036~~ 1243007 / Filtered 1243008

Time Sampled: 1030 / 1040

# of bottles/analysis

3 VOCs by 8260C

2 Total Chromium by 200.7

Comments: Pump @ 194' btoc

Purge water disposed To: Boomsnub

# PDBS FIELD FORM

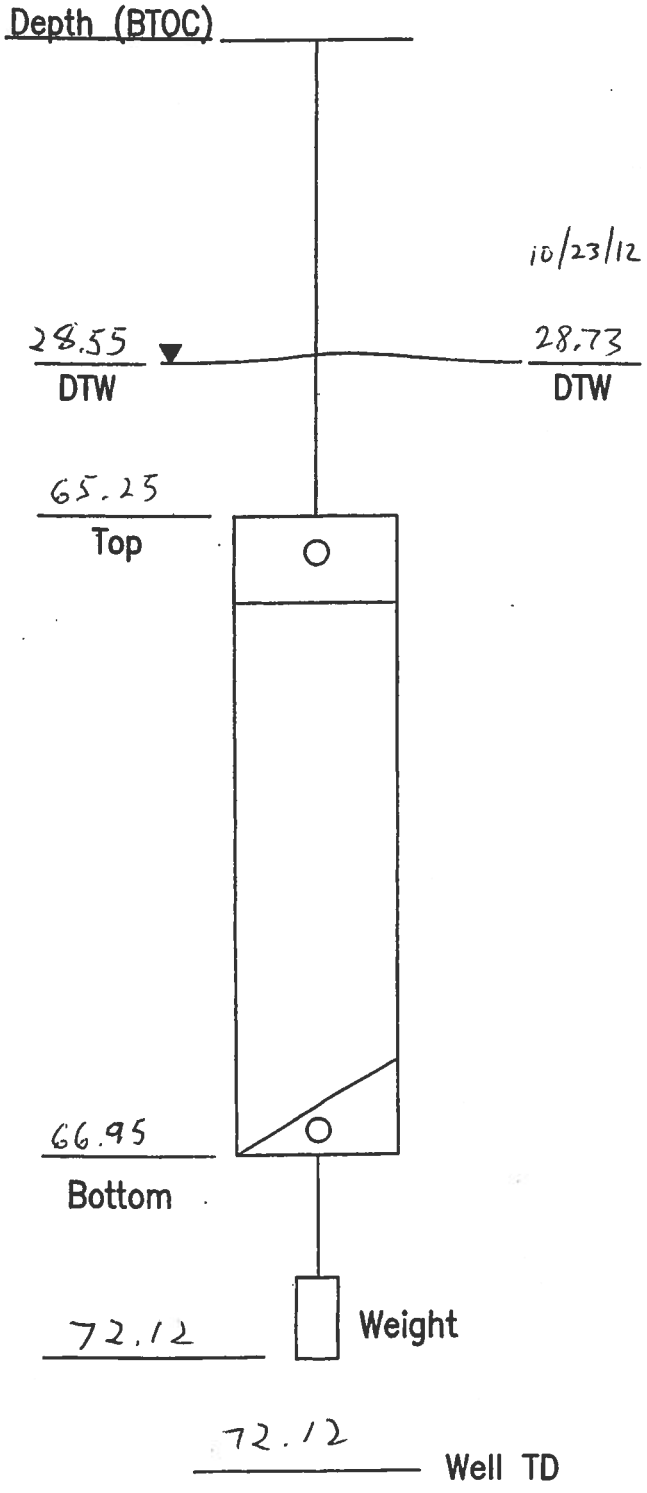
Well # CPU-12

Well Diameter 4"

Installation Date 10/9/12

Installation Time 11:50

Job# 14495.05 2012 0010
MBB, RR




## SAMPLE INFORMATION

Sample No. 1243013

Sample Time 1620

Sample Date 10/23/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen —

ORP —

pH —

Biofilm Present (Y/N) — N

Other —

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | CPU-13 |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y - mark |
| 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) | 82.7 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Clear, 57°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0952 | | | | | | | | | | |
| Depth to Ground water (ft btoc) | 45.6 | | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 12.3 | | | | | | | | | | |
| pH | 6.81 | | | | | | | | | | |
| Conductivity (mS/cm) | .291 | | | | | | | | | | |
| Turbidity (NTU) | 2 | | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 3.32 | | | | | | | | | | |
| Temperature (°C) | 11.9 | | | | | | | | | | |
| ORP/eH (mV) | ~~4.57~~ 44 | | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | Clear | | | | | | | | | | |

Sample Identification: 1242025

Time Sampled: 0956

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 895475

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | CPU-14 |
| 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) | D |
| Well Casing Plug Locked and Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 71.43 |

Site Location: Boomsnub (Fall 2012) Date: 10/23/12

Project Number: 1449505 2012 0010 Personnel: MB, RP

Purge Method: X Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well X Redi-flo Pump (#1 ~~Bad~~) ___ Other

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

Weather Conditions: Overcast, 50°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time 11:08 | 1116 | 1119 | 1122 | 1125 | 1128 | 1131 | | | | | |
| Depth to Ground water (ft btoc) 7.60 | 7.72 | 7.78 | 7.78 | 7.76 | 7.76 | 7.76 | | | | | |
| Total Groundwater Purged (gallons, liters) | 1.425 | 2.85 | 4.275 | 5.7 | 7.125 | 8.55 | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 475 | → | → | → | → | → | | | | | |
| pH | 7.35 | 7.20 | 7.17 | 7.16 | 7.17 | 7.17 | | | | | |
| Conductivity (mS/cm) | .257 | .255 | .253 | .252 | .251 | .250 | | | | | |
| Turbidity (NTU) HF Scientific | 8.8 | 2.4 | 2.1 | 1.92 | 1.53 | 1.47 | | | | | |
| Disssolved Oxygen (mg/L) | 2.10 | 0.45 | 0.18 | 0.11 | 0.09 | 0.11 | | | | | |
| Temperature (°C) | 11.7 | 11.9 | 12.2 | 12.4 | 12.4 | 12.4 | | | | | |
| ORP/eH (mV) | 119 | 113 | 106 | 100 | 96 | 95 | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | → | → | → | → | → | | | | | |

Sample Identification: 1243009

Time Sampled: 1140

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Pump set @ 66' btoc,

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-1A |
| Well Diameter (inches) | 2" |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 38.56 |

Site Location: Boomsnub (Fall 2012) Date: 10/24/12

Project Number: 1449505 2012 0010 Personnel: MBB, RR

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well X Redi-flo Pump (#1) ___Other

Sampling Equipment: ___Extraction Well X Redi-flo Pump (#1) ___Diffusion Bag

Weather Conditions: Overcast, 50°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0900 | 0917 | 0920 | 0923 | 0926 | 0929 | 0932 | 0935 | 0938 | | |
| Depth to Ground water (ft btoc) | 28.70 | 28.77 | 28.58 | 28.58 | 28.56 | 28.55 | 28.55 | 28.68 | 28.98 | | |
| Total Groundwater Purged (gallons, liters) | | 1.125 | 2.25 | 3.375 | 4.5 | 5.625 | 6.75 | 7.875 | 9.0 | | |
| Purge Rate (gpm, ft³/min, ml/min) | | 375 | → | → | → | 300 | → | → | → | | |
| pH | | 6.61 | 6.36 | 6.18 | 6.13 | 6.04 | 5.91 | 5.88 | 5.83 | | |
| Conductivity (mS/cm) | | .192 | .123 | .106 | .104 | .103 | .106 | .098 | .097 | | |
| Turbidity (NTU) | HF Scientific | 2.90 | 2.20 | 1.86 | 1.72 | 1.50 | 1.81 | 1.78 | 1.62 | | |
| Disssolved Oxygen (mg/L) | | 9.10 | 8.91 | 8.72 | 8.57 | 7.81 | 8.21 | 8.01 | 8.29 | | |
| Temperature (°C) | | 14.7 | 15.2 | 15.7 | 15.8 | 15.6 | 15.7 | 16.2 | 17.2 | | |
| ORP/eH (mV) | | 112 | 126 | 131 | 133 | 132 | 134 | 133 | 130 | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | → | → | → | → | → | → | → | | |

Sample Identification: 124301 4

Time Sampled: 0945

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:
- Pump placed @ 34.00 btoc
- Flow diminished & pulsed. Had to turn pump off and on to re-gain flow.

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-2A |
| Well Diameter (inches) | 2" |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 37.39 |

Site Location: Boomsnub (Fall 2012) Date: 10/24/12

Project Number: 1449505 2012 0010 Personnel: MB, RE

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well X Redi-flo Pump (#1 ~~Bad~~) ___Other

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

Weather Conditions: Overcast, 50°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1110 | 1120 | 1123 | 1126 | 1129 | 1132 | 1135 | | | | |
| Depth to Ground water (ft btoc) | 26.67 | 26.75 | 27.06 | 26.95 | 26.96 | 26.96 | 26.96 | | | | |
| Total Groundwater Purged (gallons, liters) | | 1.425 | 2.85 | 4.275 | 5.7 | 7.125 | 8.55 | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | | 475 | ← | | | | → | | | | |
| pH | | 6.03 | 5.99 | 6.01 | 6.05 | 6.08 | 6.12 | | | | |
| Conductivity (mS/cm) | | .096 | .089 | .086 | .082 | .081 | .080 | | | | |
| Turbidity (NTU) | | 6.6 | 2.4 | 2.2 | 1.8 | 1.72 | 1.62 | | | | |
| Disssolved Oxygen (mg/L) | | 8.35 | 8.44 | 8.52 | 8.52 | 8.50 | 8.57 | | | | |
| Temperature (°C) | | 13.3 | 14.2 | 14.4 | 15.0 | 15.2 | 15.4 | | | | |
| ORP/eH (mV) | | 152 | 150 | 150 | 148 | 147 | 149 | | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | ← | | | | → | | | | |

Sample Identification: 1243017 MS/MSD

Time Sampled: 1145

# of bottles/analysis

9 VOCs by 8260C

3 Total Chromium by 200.7

Comments: Pump set @ 35' btoc.

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-3A |
| Well Diameter (inches) | 2" |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 32.67 |

Site Location: Boomsnub (Fall 2012) Date: 10/24/12

Project Number: 1449505 2012 0010 Personnel: MB, RR

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well __X__ Redi-flo Pump (#1 ~~Bed~~) ___Other

Sampling Equipment: ___Extraction Well __X__ Redi-flo Pump (#1) ___Diffusion Bag

Weather Conditions: Overcast. 50's

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1022 | 1030 | 1033 | 1036 | 1039 | 1042 | 1045 | | | | |
| Depth to Ground water (ft btoc) | 25.06 | 25.26 | 25.26 | 25.26 | 25.26 | 25.26 | 25.26 | | | | |
| Total Groundwater Purged (gallons, liters) | | 1.26 | 2.52 | 3.78 | 5.04 | 6.3 | 7.56 | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | | 420 | → | → | → | → | → | | | | |
| pH | | 6.31 | 6.03 | 5.88 | 5.77 | 5.73 | 5.71 | | | | |
| Conductivity (mS/cm) | | .055 | .046 | 0.045 | .044 | .044 | .044 | | | | |
| Turbidity (NTU) | | 2.1 | 2.04 | 1.99 | 1.02 | 1.00 | 1.0 | | | | |
| Disssolved Oxygen (mg/L) | | 8.34 | 8.29 | 8.20 | 8.23 | 8.23 | 8.15 | | | | |
| Temperature (°C) | | 12.2 | 12.8 | 13.2 | 13.4 | 13.5 | 13.6 | | | | |
| ORP/eH (mV) | | 150 | 146 | 145 | 152 | 152 | 150 | | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | → | → | → | → | → | | | | |

Sample Identification: 1243015

Time Sampled: 1050

Purge water disposed To: Boomsnub

# of bottles/analysis

— VOCs by 8260C

1 Total Chromium by 200.7

Comments: Pump set @ 28' btoc.

# PDBS FIELD FORM

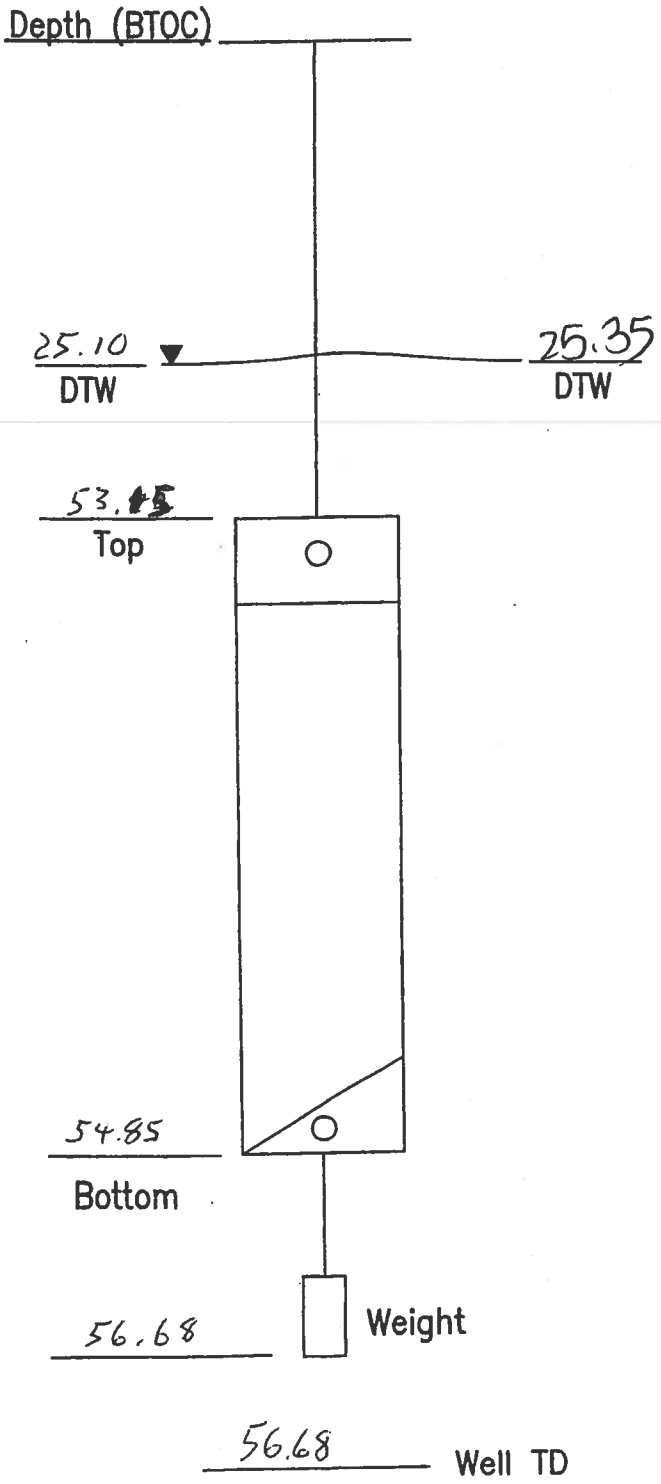
Well # MW-3B

Well Diameter 2"

Installation Date 9/27/12

Installation Time 10:12

Job# 14495 05.202 0010




## SAMPLE INFORMATION

Sample No. 1242065

Sample Time 1517

Sample Date 10/17/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: RR, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-4A |
| Well Diameter (inches) | 2" |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 37.69 |

Site Location: Boomsnub (Fall 2012) Date: 10/24/12

Project Number: 1449505 2012 0010 Personnel: MB, RR

Purge Method: X Low Flow ___ Conventional ___ None

Purge Equipment: ___ Extraction Well X Redi-flo Pump #1 (~~Bad~~) ___ Other

Sampling Equipment: ___ Extraction Well X Redi-flo Pump #1 ___ Diffusion Bag

Weather Conditions: Overcast 50°s F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1335 | 1338 | 1341 | 1344 | 1347 | 1350 | 1353 | | | |
| Depth to Ground water (ft btoc) 25.37 | 25.52 | 25.80 | 25.71 | 25.55 | 25.53 | 25.51 | 25.50 | | | |
| Total Groundwater Purged (gallons, ~~liters~~) | 1.2 | 2.4 | 3.6 | 4.8 | 5.0 | 6.2 | 7.4 | | | |
| Purge Rate (gpm, $ft^3$/min, ~~ml/min~~) | 400 | 200 | → | → | → | → | → | | | |
| pH | 6.42 | 6.38 | 6.35 | 6.33 | 6.21 | 6.16 | 6.13 | | | |
| Conductivity (mS/cm) | .235 | .130 | .117 | .115 | .103 | .101 | .104 | | | |
| Turbidity (NTU) HF Scientific | 7.0 | 6.7 | 5.2 | ~~5.8~~ | 4.3 | 5.8 | 5.2 | | | |
| Disssolved Oxygen (mg/L) | 6.47 | 6.19 | 5.70 | 5.73 | 5.76 | 5.41 | 5.43 | | | |
| Temperature (°C) | 14.3 | 15.0 | 15.2 | 15.3 | 15.8 | 16.3 | 16.4 | | | |
| ORP/eH (mV) | 151 | 152 | 150 | 148 | 145 | 141 | 140 | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | → | → | → | → | → | → | | | |

Sample Identification: 1243018

Time Sampled: 1400

Purge water disposed To: Boomsnub

# of bottles/analysis

— VOCs by 8260C

1 Total Chromium by 200.7

Comments: Pump set @ 32 ft btoc.

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-48 |
| Well Diameter (inches) | 2 |
| Well Monument Locked and 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 Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 44.77 |

Site Location: Boomsnub (Fall 2012) Date: 10/24/12

Project Number: 1449505 2012 0010 Personnel: MBB, RR

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well X Redi-flo Pump (#1 ~~Red~~) ___Other

Sampling Equipment: ___Extraction Well X Redi-flo Pump #1 ___Diffusion Bag

Weather Conditions: overcast, scattered showers, 50's.

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1425 | 1428 | 1431 | 1434 | 1437 | | | | | |
| Depth to Ground water (ft btoc) 25.33 | 25.71 | 25.70 | 25.69 | 25.54 | 25.53 | | | | | |
| Total Groundwater Purged (gallons, liters) | 0.75 | 1.5 | 2.25 | 3.0 | 3.75 | | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 250 | → | → | → | → | | | | | |
| pH | 6.31 | 6.14 | 5.97 | 5.93 | 5.93 | | | | | |
| Conductivity (mS/cm) | .099 | .095 | .092 | .092 | .092 | | | | | |
| Turbidity (NTU) HF Scientific | 3.8 | 2.4 | 1.6 | 1.2 | 0.9 | | | | | |
| Disssolved Oxygen (mg/L) | 4.88 | 4.27 | 3.89 | 3.71 | 3.64 | | | | | |
| Temperature (°C) | 13.5 | 13.7 | 14.6 | 15.1 | 15.1 | | | | | |
| ORP/eH (mV) | 156 | 159 | 158 | 156 | 156 | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | → | → | → | → | | | | | |

Sample Identification: 1243019

Time Sampled: 1445

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Pump placed @ 42' btoc

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-63 |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y - mw cover |
| 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) | 59 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: BB, ST

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Sprinkling, 64°F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1345 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 39.88 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm) ft³/min, ml/min) | 6.6.7 | | | | | | | | | |
| pH | 6.76 | | | | | | | | | |
| Conductivity (mS/cm) | .176 | | | | | | | | | |
| Turbidity (NTU) | 0 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 7.88 | | | | | | | | | |
| Temperature (°C) | 14.0 | | | | | | | | | |
| ORP/eH (mV) | 4.29 142 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242003, 1242009 (dup) # of bottles/analysis

Time Sampled: 1347, 1352

Purge water disposed To: Boomsnub

3 6 VOCs by 8260C

1 2 Total Chromium by 200.7

Comments: Totalizer 471290

\14495.05\FY2012\0010\\purgesampleform.xls

# PDBS FIELD FORM

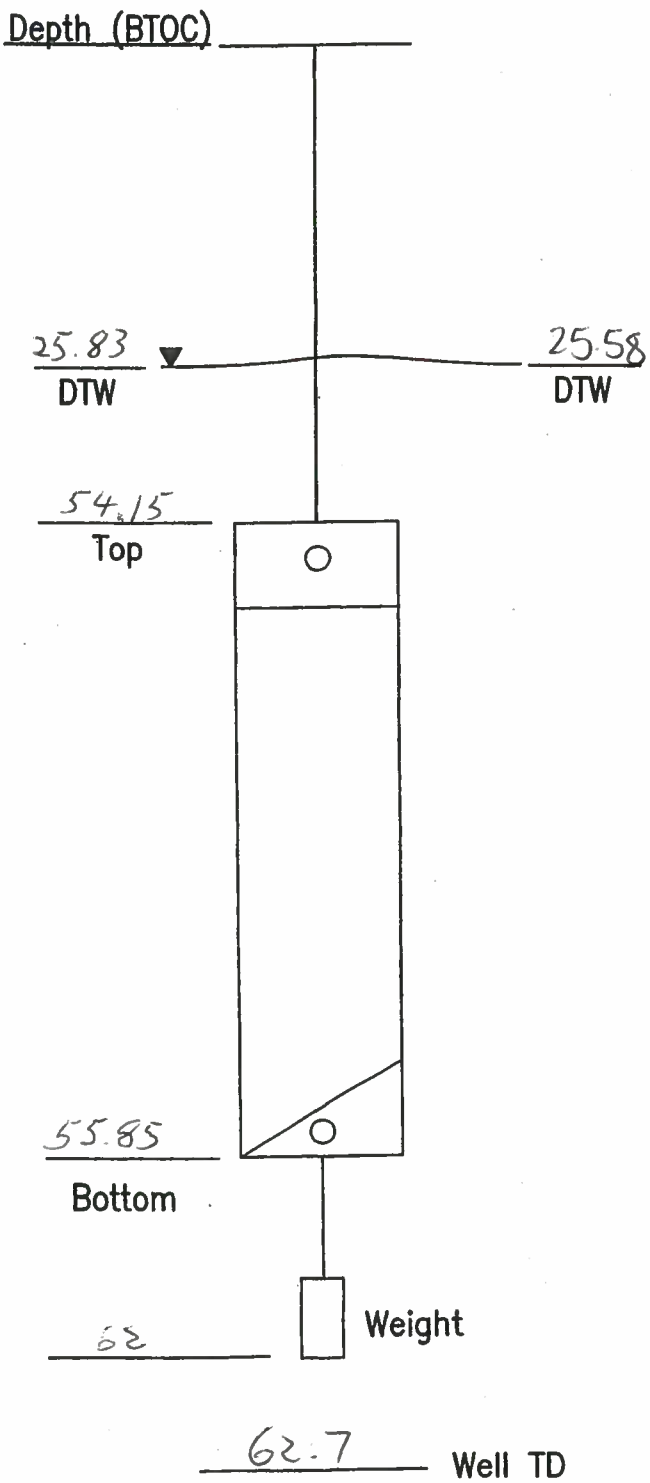
Well # MW-8B

Well Diameter 4"

Installation Date 9/27/12

Installation Time 13:40

Job# 14495.05 20120010




## SAMPLE INFORMATION

Sample No. 1242058

Sample Time 1045

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

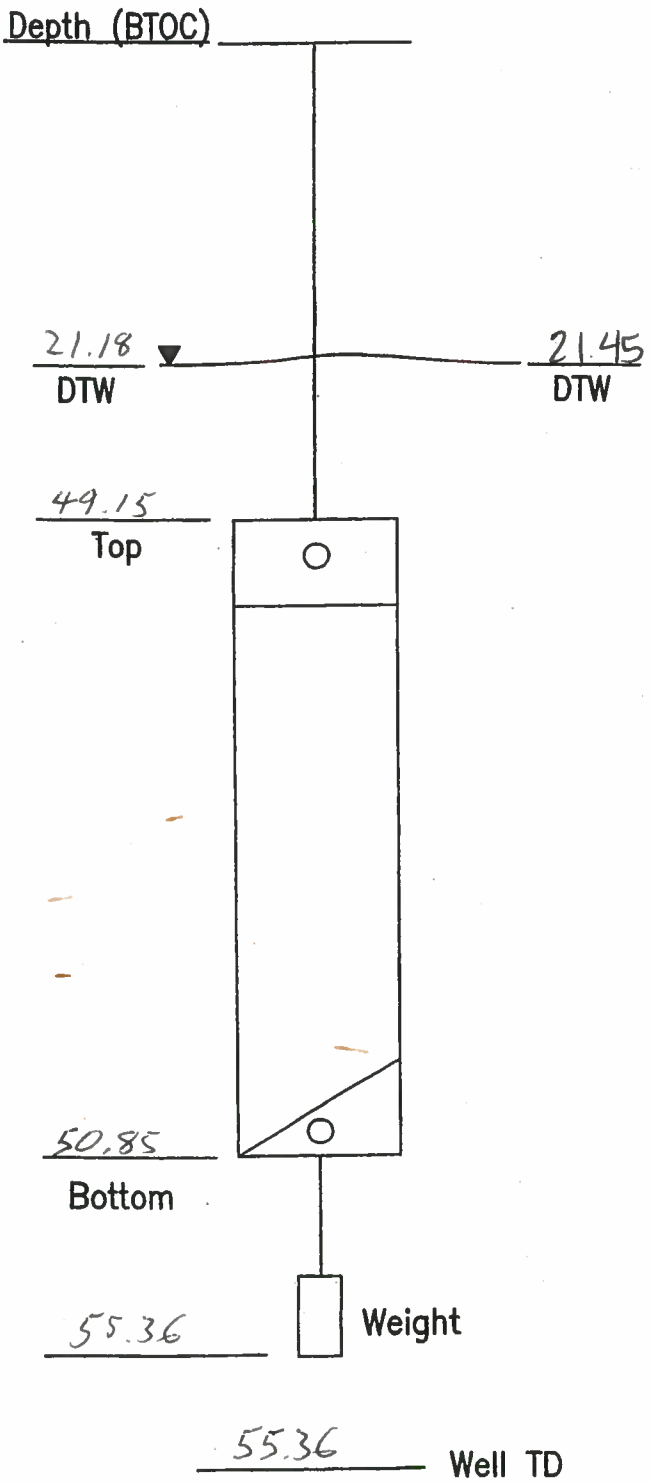
Well # MW-9B

Well Diameter 4"

Installation Date 9/27/12

Installation Time _____

Job# 14495.05.7012.6010




## SAMPLE INFORMATION

Sample No. 1242060

Sample Time 1050

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-108 |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y - mw-6 |
| Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing) | D (moist soil) |
| Well Casing Plug Locked and Good Condition? | Y |
| PID Reading in Well (ppm) | NA |
| Well Total Depth (ft btoc) | 61.5 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: RR, ST

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Sprinkling, 64°F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1355 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 34.6 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (~~gpm~~, ft$^3$/min, ml/min) | 8.7 | | | | | | | | | |
| pH | 6.64 | | | | | | | | | |
| Conductivity (mS/cm) | .198 | | | | | | | | | |
| Turbidity (NTU) | 3 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 8.45 | | | | | | | | | |
| Temperature (°C) | 13.4 | | | | | | | | | |
| ORP/eH (mV) | ~~350~~ 132 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242005

Time Sampled: 1358

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer: 5855750

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-10C |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y-mw |
| Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing) | WBC (moist) |
| 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 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: RR, ST

Purge Method: ___Low Flow ___Conventional _X_None

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

Sampling Equipment: _X_Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: Sprinkling, 64°F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1404 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 21.62 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 10 | | | | | | | | | |
| pH | 6.7 | | | | | | | | | |
| Conductivity (mS/cm) | .152 | | | | | | | | | |
| Turbidity (NTU) | 2 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 7.17 | | | | | | | | | |
| Temperature (°C) | 13.5 | | | | | | | | | |
| ORP/eH (mV) | ~~3.61~~ 133 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | Clear | | | | | | | | | |

Sample Identification: 1242007

Time Sampled: 1408

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer: 4935670

# PDBS FIELD FORM

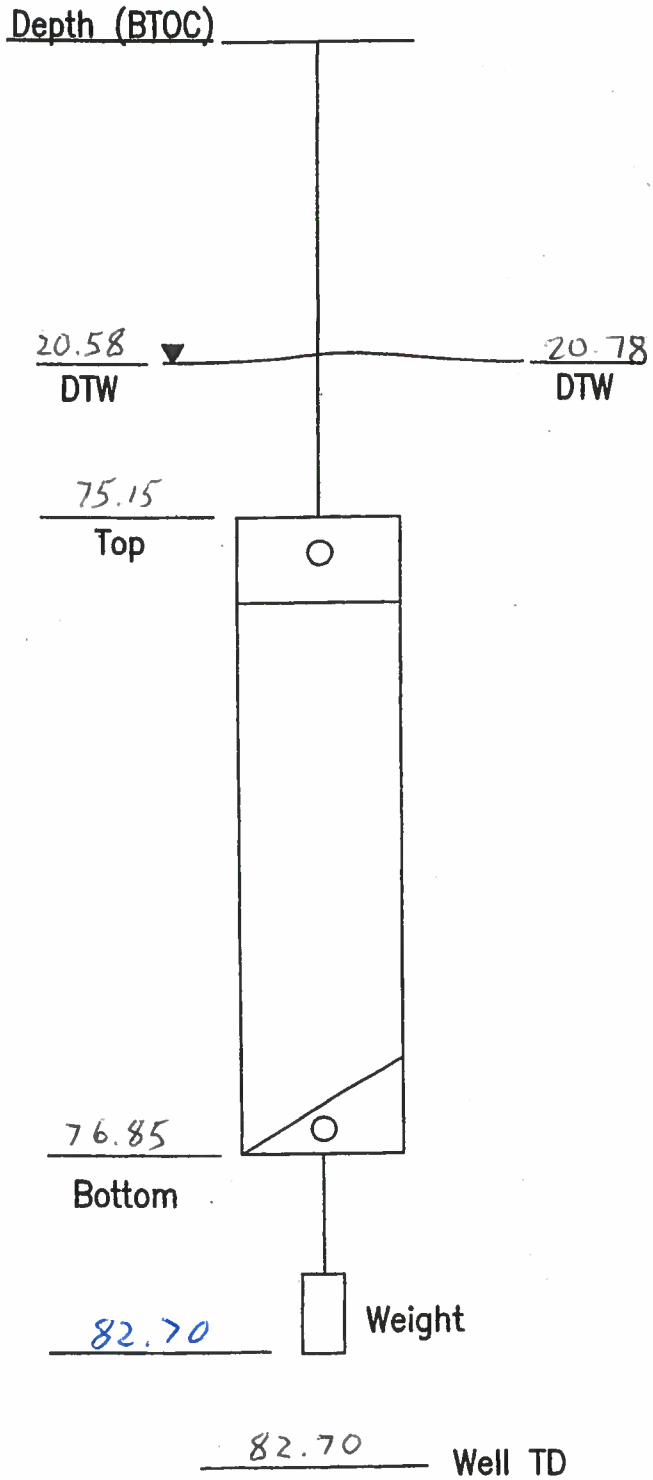
Well # MW-12C

Well Diameter 4"

Installation Date 9/28/12

Installation Time 10:50

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242062

Sample Time 1105

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples: MB, KB, 5

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

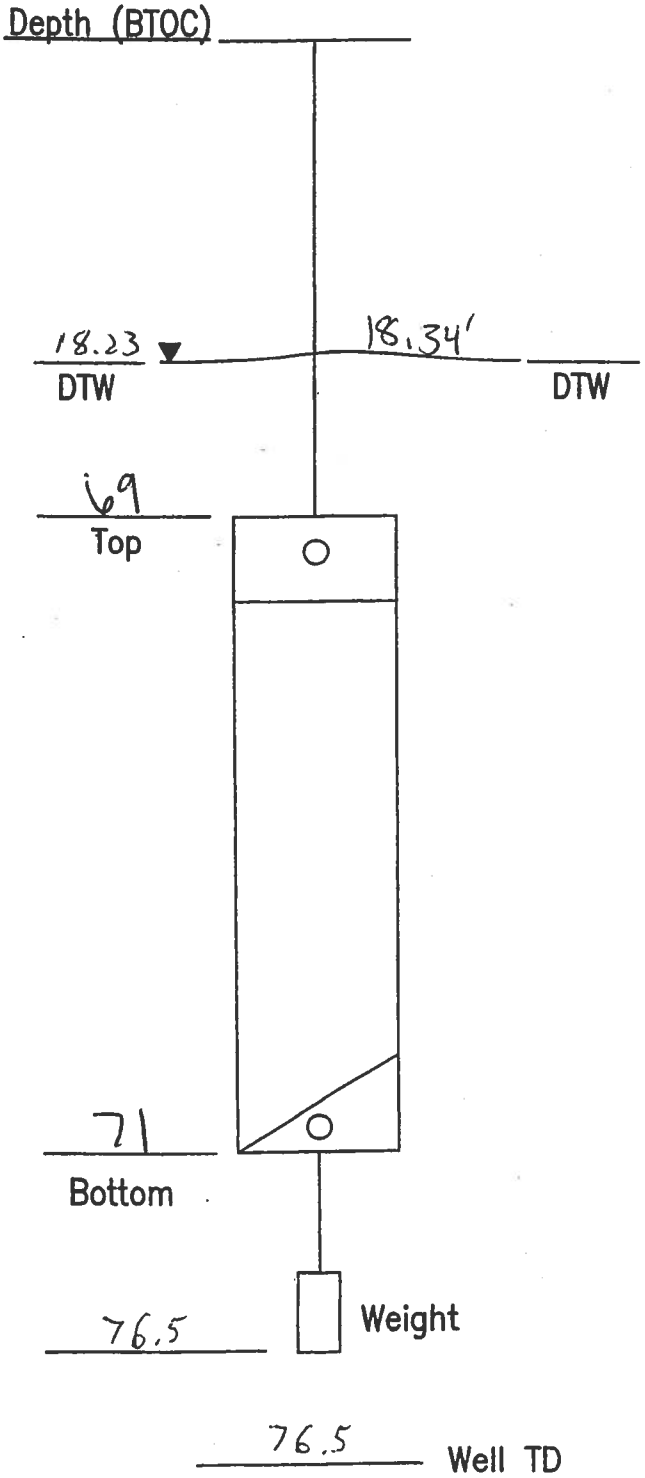
Well # MW-13C

Well Diameter 4"

Installation Date 9/28/12

Installation Time 11:10

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242064
1242066 (dup)

Sample Time 1110
1115 (dup)

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen MA

ORP MA

pH MA

Biofilm Present (Y/N) N

Other N/A

Samples: MS, KB, ST

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-14C |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y-marker |
| 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) | 81.5 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: RR, ST

Purge Method: ___Low Flow ___Conventional __X__None

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

Sampling Equipment: __X__Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 57° F, Sunny

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1321 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 31.55 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm), ft$^3$/min, ml/min) | 12 | | | | | | | | | |
| pH | 6.55 | | | | | | | | | |
| Conductivity (mS/cm) | .232 | | | | | | | | | |
| Turbidity (NTU) | 0.33 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 5.70 | | | | | | | | | |
| Temperature (°C) | 13.9 | | | | | | | | | |
| ORP/eH (mV) | 142 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242039, 1242041(dup) # of bottles/analysis

Time Sampled: 1325, 1330 (dup)

6 VOCs by 8260C

2 Total Chromium by 200.7

Purge water disposed To: Boomsnub

Comments: Totalizer 9572290

Duplicate Sample collected

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-14E |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y-mm |
| 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) | 126 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: 57°F, Sunny

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1335 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 30.34 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 8 | | | | | | | | | |
| pH | 6.90 | | | | | | | | | |
| Conductivity (mS/cm) | .348 | | | | | | | | | |
| Turbidity (NTU) | 0.30 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 1.24 | | | | | | | | | |
| Temperature (°C) | 13.3 | | | | | | | | | |
| ORP/eH (mV) | 145 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242043

Time Sampled: 1337

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 8741030

# PDBS FIELD FORM

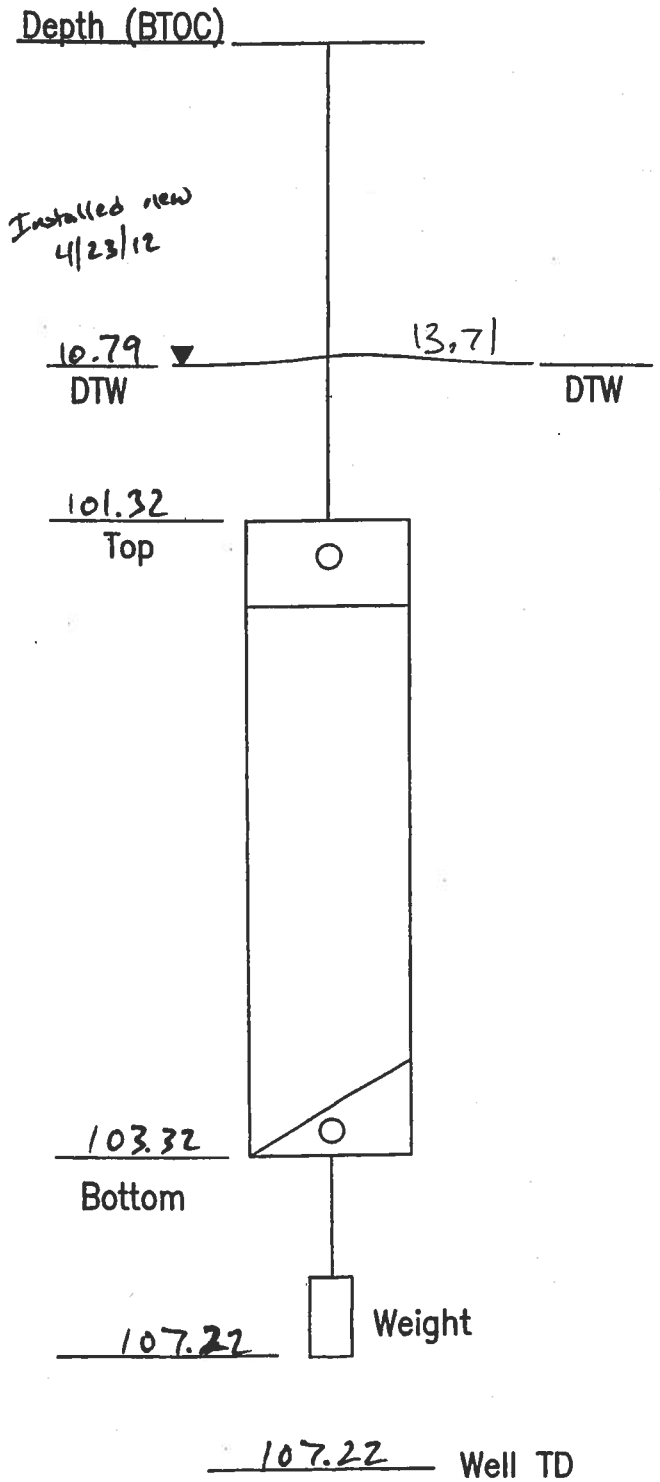
Well # MW-15E

Well Diameter 4"

Installation Date 4/23/12

Installation Time 1600

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242070

Sample Time 1240

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples: MB, KB, SS

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# PDBS FIELD FORM

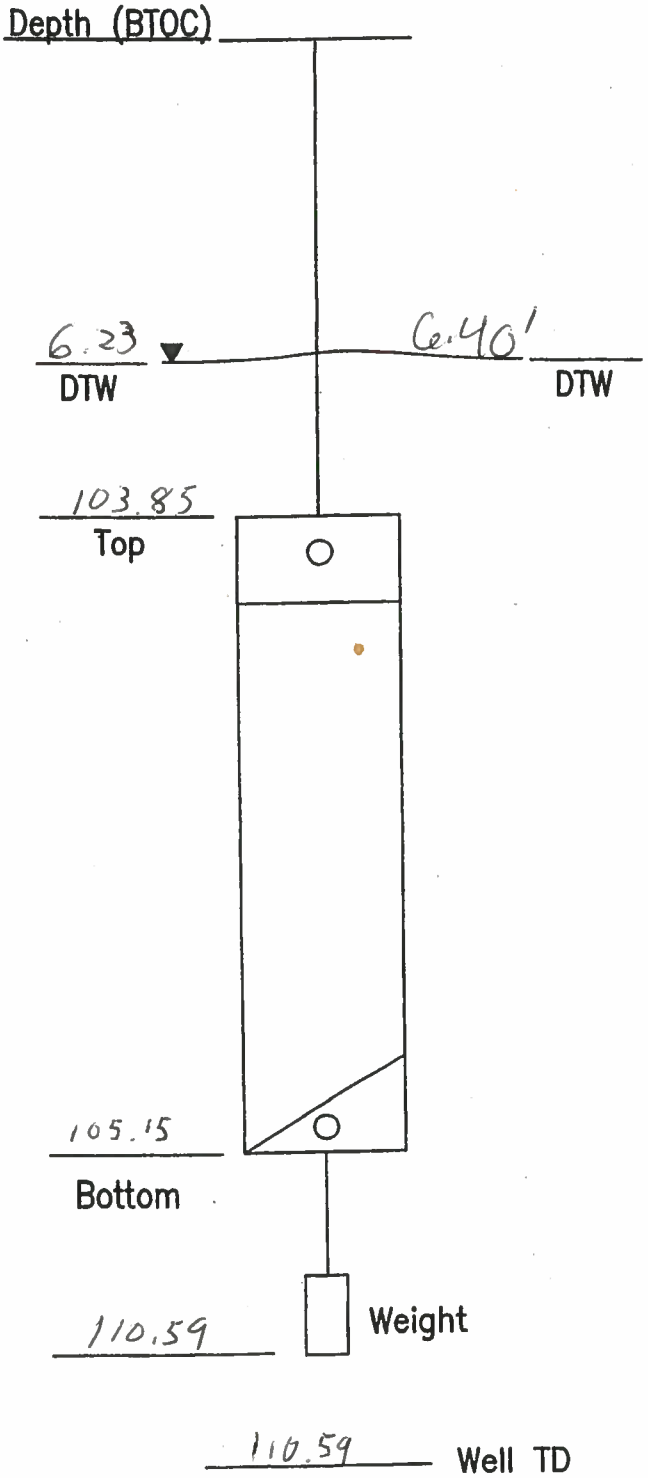
Well # MW-16E

Well Diameter 4"

Installation Date 9/28/12

Installation Time 12:25

Job# 14495.05.2012.0010




## SAMPLE INFORMATION

Sample No. 12420608

Sample Time 1230

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples: MB, KB ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-18D |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y-mangled |
| 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) | 94.4 |

Site Location: Boomsnub (Fall 2012) Date: 10/10/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Sunny. 57°F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1307 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 20.20 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm, ft$^3$/min, ml/min) | 1 | | | | | | | | | |
| pH | 6.77 | | | | | | | | | |
| Conductivity (mS/cm) | .487 | | | | | | | | | |
| Turbidity (NTU) | 0.60 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 1.73 | | | | | | | | | |
| Temperature (°C) | 14 | | | | | | | | | |
| ORP/eH (mV) | 147 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242037

Time Sampled: 1314

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer ~~5941751~~ 5941750

# PDBS FIELD FORM

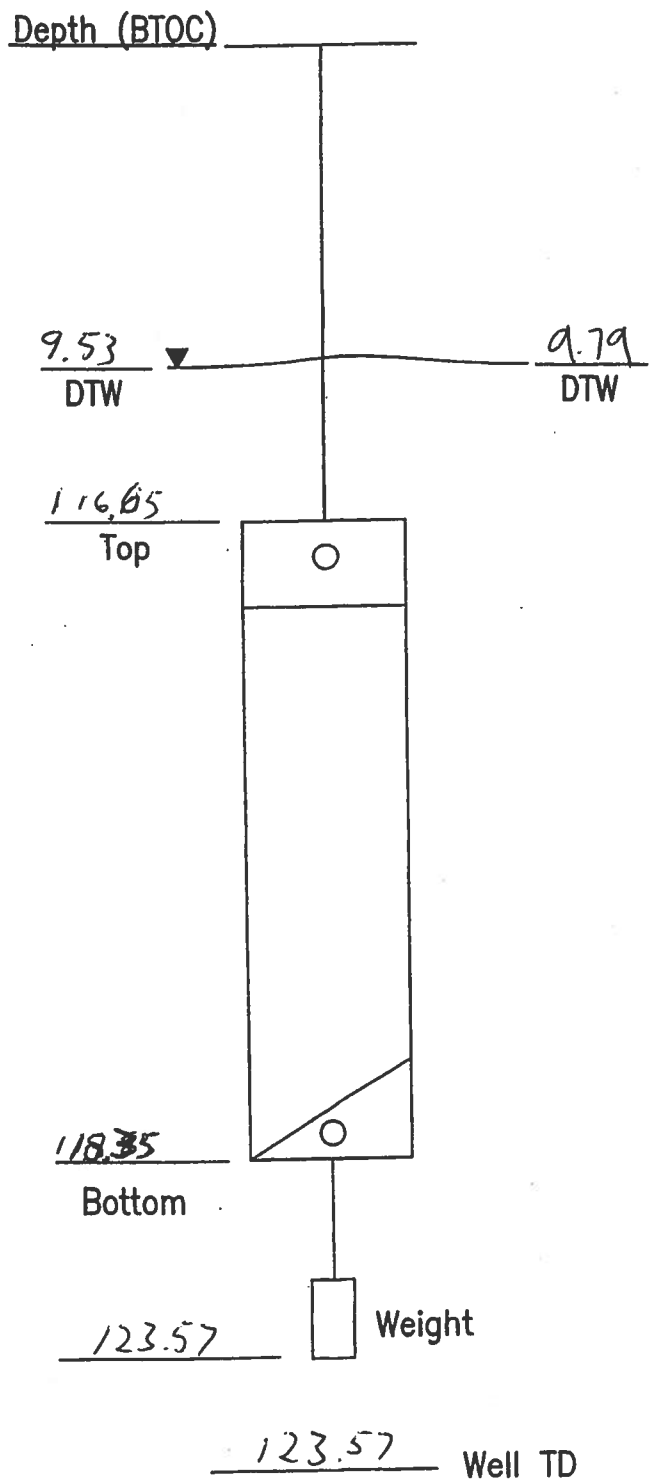
Well # MW-18E

Well Diameter 4"

Installation Date 9/28/12

Installation Time 12:05

Job# 14495.05 2012 0010




## SAMPLE INFORMATION

Sample No. 124207

Sample Time 1252

Sample Date 10/18/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples: MB, KB, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# 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 (moisture bottom) |
| 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 2012) Date: 10/10/12

Project Number: 1449505 2012 0010 Personnel: ST, RK

Purge Method: ___Low Flow ___Conventional _X_None

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

Sampling Equipment: _X_Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 57°F rain

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1108 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 14.10 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (~~gpm~~, ft$^3$/min, ml/min) | 9.8 | | | | | | | | | |
| pH | 6.61 | | | | | | | | | |
| Conductivity (mS/cm) | .280 | | | | | | | | | |
| Turbidity (NTU) | 6 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | ~~3~~ 2.45 | | | | | | | | | |
| Temperature (°C) | 13.0 | | | | | | | | | |
| ORP/eH (mV) | ~~4.70~~ 140 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242035

Time Sampled: 1113

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 5223110

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-20D |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y - mumbi |
| Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing) | D (moist bottom) |
| Well Casing Plug Locked and Good Condition? | Y |
| PID Reading in Well (ppm) | NA |
| Well Total Depth (ft btoc) | 87 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional _X_None

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

Sampling Equipment: _X_Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: 57°F ~~Sunny~~ begin raining

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1048 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 46.05 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | N.A | | | | | | | | | |
| Purge Rate (gpm, ft$^3$/min, ml/min) | 15 | | | | | | | | | |
| pH | 6.89 | | | | | | | | | |
| Conductivity (mS/cm) | .299 | | | | | | | | | |
| Turbidity (NTU) | 0 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 5.00 | | | | | | | | | |
| Temperature (°C) | 12.7 | | | | | | | | | |
| ORP/eH (mV) | ~~4.65~~ 139 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242033

Time Sampled: 1051

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 806995

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-21D |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y- manhole |
| Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing) | D (no standing water) |
| Well Casing Plug Locked and Good Condition? | Y |
| PID Reading in Well (ppm) | NA |
| Well Total Depth (ft btoc) | 107 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional _X_None

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

Sampling Equipment: _X_Extraction Well ___Redi-flo Pump ___Diffusion Bag

Weather Conditions: Sunny, 57° F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1010 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 32.27 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (~~gpm~~, ft³/min, ml/min) | 11.3 | | | | | | | | | |
| pH | 6.86 | | | | | | | | | |
| Conductivity (mS/cm) | .265 | | | | | | | | | |
| Turbidity (NTU) | 1 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 5.00 | | | | | | | | | |
| Temperature (°C) | 12.4 | | | | | | | | | |
| ORP/eH (mV) | ~~469~~ 140 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242027, 1242029 (DUP)

Time Sampled: 1015 (EV for MS/MSD) 1020 (dup)

Purge water disposed To: Boomsnub

| # of bottles/analysis | |
|---|---|
| 12 | VOCs by 8260C |
| 4 | Total Chromium by 200.7 |

Comments: Dup + MS/MSD (EV) collected

Totalizer 448161

# 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) | WBC |
| Well Casing Plug Locked and Good Condition? | Y |
| PID Reading in Well (ppm) | NA |
| Well Total Depth (ft btoc) | 65.2 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Sunny, 57°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1030 | | | | | | | | | | |
| Depth to Ground water (ft btoc) | 31.46 | | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | | |
| Purge Rate (gpm, ft³/min, ml/min) | 1/4 | | | | | | | | | | |
| pH | 6.82 | | | | | | | | | | |
| Conductivity (mS/cm) | .355 | | | | | | | | | | |
| Turbidity (NTU) | 2 | | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 3.24 | | | | | | | | | | |
| Temperature (°C) | 12.10 | | | | | | | | | | |
| ORP/eH (mV) | 4.645 | 144 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | | |

Sample Identification: 1242031

Time Sampled: 1035

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

___

Comments: Totalizer 111179

Purge water disposed To: Boomsnub

# PDBS FIELD FORM

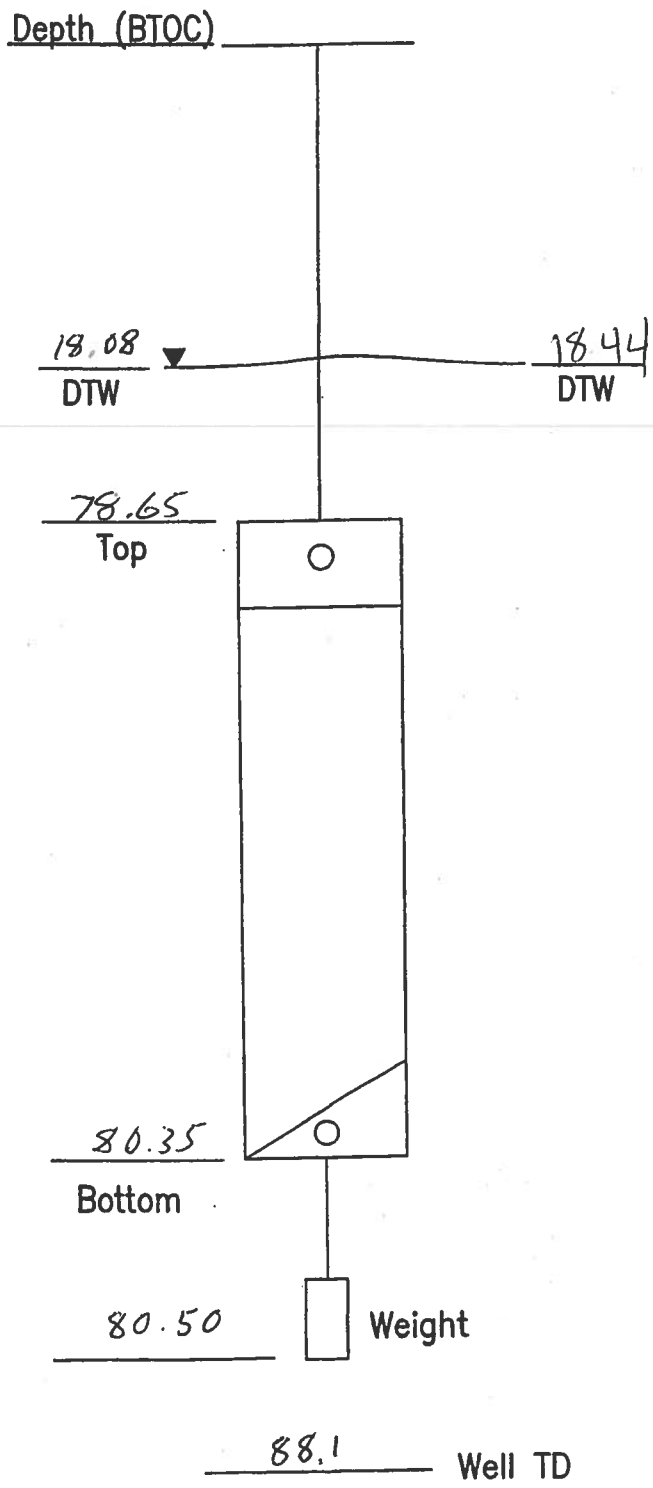
Well # MW-23d

Well Diameter 4"

Installation Date 9/28/12

Installation Time 13:10

Job# 1449505 2012 0010




## SAMPLE INFORMATION

Sample No. 1242063

Sample Time 1106

Sample Date 10/17/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers ST, RR

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-25D |
| Well Diameter (inches) | 6 |
| Well Monument Locked and Good Condition? | Y- manhole |
| 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) | 79.05 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Sunny, 57°F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0937 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 34.13 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 6.2 | | | | | | | | | |
| pH | ~~8~~ 8.80 | | | | | | | | | |
| Conductivity (mS/cm) | .253 | | | | | | | | | |
| Turbidity (NTU) | 0 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 3.69 | | | | | | | | | |
| Temperature (°C) | 12.3 | | | | | | | | | |
| ORP/eH (mV) | ~~4.75~~ 146 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 1242023

Time Sampled: 0940

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 2412990

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-26D |
| Well Diameter (inches) | 4 |
| Well Monument Locked and Good Condition? | Y - manhole |
| 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) | 94.2 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RR

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: clear, 57°F

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

| | |
|---|---|
| Time | 0859 |
| Depth to Ground water (ft btoc) | 46.1 |
| Total Groundwater Purged (gallons, liters) | NA |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 8.5 |
| pH | 7.80 |
| Conductivity (mS/cm) | ~~531~~ 545 |
| Turbidity (NTU) | 1.14 |
| Disssolved Oxygen (mg/L) | 3.80 |
| Temperature (°C) | 12.6 |
| ORP/eH (mV) | ~~5.25~~ 141 |
| Color of Purged Water (gray, brown, red, clear) | clear |

Sample Identification: 1242017

Time Sampled: 0904

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 1410630

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-27D |
| 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) 71.2 * | |

Site Location: Boomsnub (Fall 2012) Date: 10/22/12

Project Number: 1449505 2012 0010 Personnel: MBB, RQ

Purge Method: X Low Flow ___Conventional ___None

Purge Equipment: ___Extraction Well ___X Redi-flo Pump (#1 ~~Bad~~) ___Other

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

Weather Conditions: Overcast. 50's

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

| Time | 1510 | 1513 | 1516 | 1519 | 1522 | 1525 | 1528 | 1531 | 1534 |
|---|---|---|---|---|---|---|---|---|---|
| Depth to Ground water (ft btoc) 29.40 | 29.56 | 29.57 | 29.57 | 29.57 | 29.57 | 29.57 | 29.57 | 29.57 | 29.57 |
| Total Groundwater Purged (gallons, liters) | 0.9 | 1.8 | 2.7 | 3.6 | 4.5 | 5.4 | 6.3 | 7.2 | 8.1 |
| Purge Rate (gpm, ft³/min, ml/min) | 300 | → | → | → | → | → | → | → | → |
| pH | 6.92 | 6.96 | 6.98 | 6.96 | 6.95 | 6.94 | 6.93 | 6.91 | 6.89 |
| Conductivity (mS/cm) | .276 | .280 | .287 | .275 | .270 | .263 | .258 | .255 | .257 |
| Turbidity (NTU) HF Scientific | 18.5 | 17.0 | 13.5 | 11.8 | 8.2 | 7.5 | 7.2 | 6.1 | 5.8 |
| Disssolved Oxygen (mg/L) | 2.07 | 0.58 | 0.29 | 0.14 | 0.12 | 0.10 | 0.08 | 0.07 | 0.06 |
| Temperature (°C) | 12.6 | 12.8 | 13.1 | 13.1 | 13.1 | 13.2 | 13.2 | 13.1 | 13.1 |
| ORP/eH (mV) | -191 | -105 | 18 | 73 | 82 | 87 | 89 | 91 | 93 |
| Color of Purged Water (gray, brown, red, clear) | clear | → | → | → | → | → | → | → | → |

Sample Identification: 1243003 MS/MSD
1243004 Dup

Time Sampled: 1540
1545

Purge water disposed To: Boomsnub

# of bottles/analysis

12 VOCs by 8260C

4 Total Chromium by 200.7

Comments:
- Pump placed @ ~~70~~ 71' btoc
- PVC casing recently extended

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-31 |
| 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 (most) |
| Well Casing Plug Locked and Good Condition? | Y |
| PID Reading in Well (ppm) | NA |
| Well Total Depth (ft btoc) | 85 |

Site Location: Boomsnub (Fall 2012) Date: 10/15/12

Project Number: 1449505 2012 0010 Personnel: PR, ST

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Sprinkling, 64°F

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

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1430 | 1507 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 22.32 | 30.33 | | | | | | | | | |
| Total Groundwater Purged (~~gallons~~, liters) | ~~NA~~ 0 | 439 | | | | | | | | | |
| Purge Rate (~~gpm~~, ft³/min, ml/min) | 13 | 13 | | | | | | | | | |
| pH | | 6.93 | | | | | | | | | |
| Conductivity (mS/cm) | | .203 | | | | | | | | | |
| Turbidity (NTU) | | 0 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | | 4.17 | | | | | | | | | |
| Temperature (°C) | | 13.2 | | | | | | | | | |
| ORP/eH (mV) | | ~~5.05~~ 151 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | | clear | | | | | | | | | |

Sample Identification: 12420013

Time Sampled: 1508

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer: 6925791 (start)
6926230 (finish)
Start extraction @ 1430

# 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) | — |
| Well Total Depth (ft btoc) | 215 |

Site Location: Boomsnub (Fall 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel:

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: Overcast, windy, ~61°

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1525 | 1528 | 1531 | 1534 | 1537 | 1540 | 1543 | 1546 | 1549 | 1552 |
| Depth to Ground water (ft btoc) | 128.57 | 128.60 | 128.60 | 128.60 | 128.60 | 128.60 | 128.60 | 128.60 | 128.60 | 128.59 |
| Total Groundwater Purged (gallons, liters) | | 1.2 | 2.4 | 3.6 | 4.8 | 6.0 | 7.2 | 8.4 | 9.6 | 10.8 |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| pH | | 6.90 | 6.84 | 6.79 | 6.73 | 6.68 | 6.64 | 6.60 | 6.58 | 6.58 |
| Conductivity (mS/cm) | | 0.150 | 0.151 | 0.151 | 0.152 | 0.152 | 0.152 | 0.152 | 0.152 | 0.151 |
| Turbidity (NTU) | | 0.64 | 0.62 | 0.46 | 0.39 | 0.31 | 0.31 | 0.24 | 0.24 | 0.25 |
| Disssolved Oxygen (mg/L) | | 1.83 | 1.71 | 1.69 | 1.70 | 1.72 | 1.73 | 1.73 | 1.73 | 1.73 |
| Temperature (°C) | | 13.2 | 12.9 | 12.7 | 12.7 | 12.7 | 12.8 | 12.9 | 13.0 | 13.2 |
| ORP/eH (mV) | | 238 | 235 | 229 | 222 | 215 | 205 | 195 | 189 | 185 |
| Color of Purged Water (gray, brown, red, clear) | | clear | clear | clear | clear | clear | clear | clear | clear | clear |

Sample Identification: 1242020

Time Sampled: 1555

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments:

Purge water disposed To: Boomsnub

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-35 |
| 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) | D |
| Well Casing Plug Locked and Good Condition? | yes |
| PID Reading in Well (ppm) | — |
| Well Total Depth (ft btoc) | 39.84 |

Site Location: Boomsnub (Fall 2012) Date: 10/22/12

Project Number: 1449505 2012 0010 Personnel: MOB, RE

Purge Method: X Low Flow ___Conventional ___None

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

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

Weather Conditions: Overcast, Rain 50's.

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 1158 | 1201 | 1204 | 1207 | 1210 | 1213 | | | | |
| Depth to Ground water (ft btoc) 18.16 | 18.24 | 18.25 | 18.25 | 18.25 | 18.25 | 18.25 | | | | |
| Total Groundwater Purged (gallons, ~~liters~~) | 1.425 | 2.85 | 4.275 | 5.7 | 7.125 | 8.55 | | | | |
| Purge Rate (gpm, ft³/min, ~~ml/min~~) | 475 | → | → | → | → | → | | | | |
| pH | 6.66 | 6.68 | 6.66 | 6.66 | 6.64 | 6.65 | | | | |
| Conductivity (mS/cm) | .290 | .212 | .178 | .174 | .171 | .170 | | | | |
| Turbidity (NTU) HF Scientific | 1.60 | 1.58 | 1.55 | 1.52 | 0.92 | 0.85 | | | | |
| Disssolved Oxygen (mg/L) | 3.00 | 2.06 | 1.95 | 1.93 | 1.87 | 1.74 | | | | |
| Temperature (°C) | 12.2 | 12.3 | 12.6 | 12.6 | 12.6 | 12.7 | | | | |
| ORP/eH (mV) | 183 | 171 | 150 | 144 | 141 | 137 | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | → | → | → | → | → | | | | |

Sample Identification: 1243002

Time Sampled: 1218

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Pump set @ 85' bgs.

Purge water disposed To: Boomsnub

deployment

# PDBS FIELD FORM

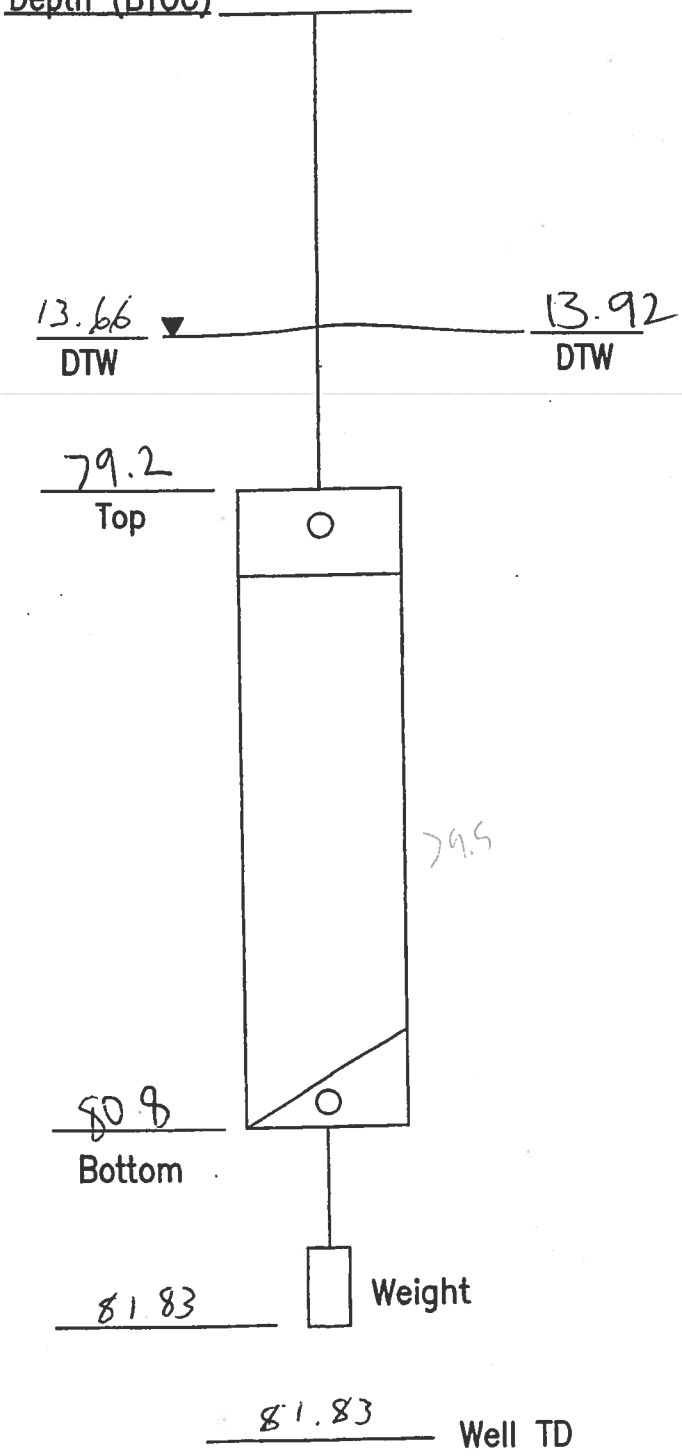
Well # MW-38

Well Diameter 2"

Installation Date 9/28/12

Installation Time 12:50

Job# 144905.05.2012.0010




## SAMPLE INFORMATION

Sample No. 1242059

Sample Time 1033

Sample Date 10/10/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samples ST, RR

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Ground Water Purge and Sampling Form

| | |
|---|---|
| Well Identification | MW-49 |
| Well Diameter (inches) | 6 |
| Well Monument Locked and Good Condition? | Y-manhole |
| 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 2012) Date: 10/16/12

Project Number: 1449505 2012 0010 Personnel: ST, RL

Purge Method: ___Low Flow ___Conventional X None

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

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

Weather Conditions: Clear, 57°F

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

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Time | 0915 | | | | | | | | | |
| Depth to Ground water (ft btoc) | 39 | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | |
| Purge Rate (gpm, ft$^3$/min, ml/min) | 12.3 | | | | | | | | | |
| pH | 6.6 | | | | | | | | | |
| Conductivity (mS/cm) | .217 | | | | | | | | | |
| Turbidity (NTU) | 0 | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 3.64 | | | | | | | | | |
| Temperature (°C) | 12.7 | | | | | | | | | |
| ORP/eH (mV) | ~~4.97~~ #3 | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | |

Sample Identification: 12 42019

Time Sampled: 0918

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: Totalizer 770230

# Ground Water Purge and Sampling Form

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Identification | ~~PW01D~~ PW-3B | Site Location: Boomsnub (Fall 2012) | | | | | | | | Date: 10/15/12 | |
| Well Diameter (inches) | 6 | Project Number: 1449505 2012 0010 | | | | | | | | Personnel: RR, ST | |
| Well Monument Locked and Good Condition? | Y - ~~mangled~~ | Purge Method: ___Low Flow ___Conventional X None | | | | | | | | | |
| Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing) | D | Purge Equipment: X Extraction Well ___Redi-flo Pump (Ded) ___Other | | | | | | | | | |
| Well Casing Plug Locked and Good Condition? | Y | Sampling Equipment: X Extraction Well ___Redi-flo Pump ___Diffusion Bag | | | | | | | | | |
| PID Reading in Well (ppm) | NA | Weather Conditions: Sprinkling, 64°F | | | | | | | | | |
| Well Total Depth (ft btoc) | 58 | Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons | | | | | | | | | |
| Time | 1328 | | | | | | | | | | |
| Depth to Ground water (ft btoc) | 28.1 | | | | | | | | | | |
| Total Groundwater Purged (gallons, liters) | NA | | | | | | | | | | |
| Purge Rate (gpm, $ft^3$/min, ml/min) | 9.8 | | | | | | | | | | |
| pH | 6.69 | | | | | | | | | | |
| Conductivity (mS/cm) | .271 | | | | | | | | | | |
| Turbidity (NTU) | 0 | | | | | | | | | | |
| Disssolved Oxygen (mg/L) | 7.93 | | | | | | | | | | |
| Temperature (°C) | 14.4 | | | | | | | | | | |
| ORP/eH (mV) | ~~3.64~~ 135 | | | | | | | | | | |
| Color of Purged Water (gray, brown, red, clear) | clear | | | | | | | | | | |

327.5160

Sample Identification: 1242001

Time Sampled: 1328

Purge water disposed To: Boomsnub

# of bottles/analysis

3 VOCs by 8260C

1 Total Chromium by 200.7

Comments: 327x5160 9.8 gals/min totalizer reading

# PDBS FIELD FORM

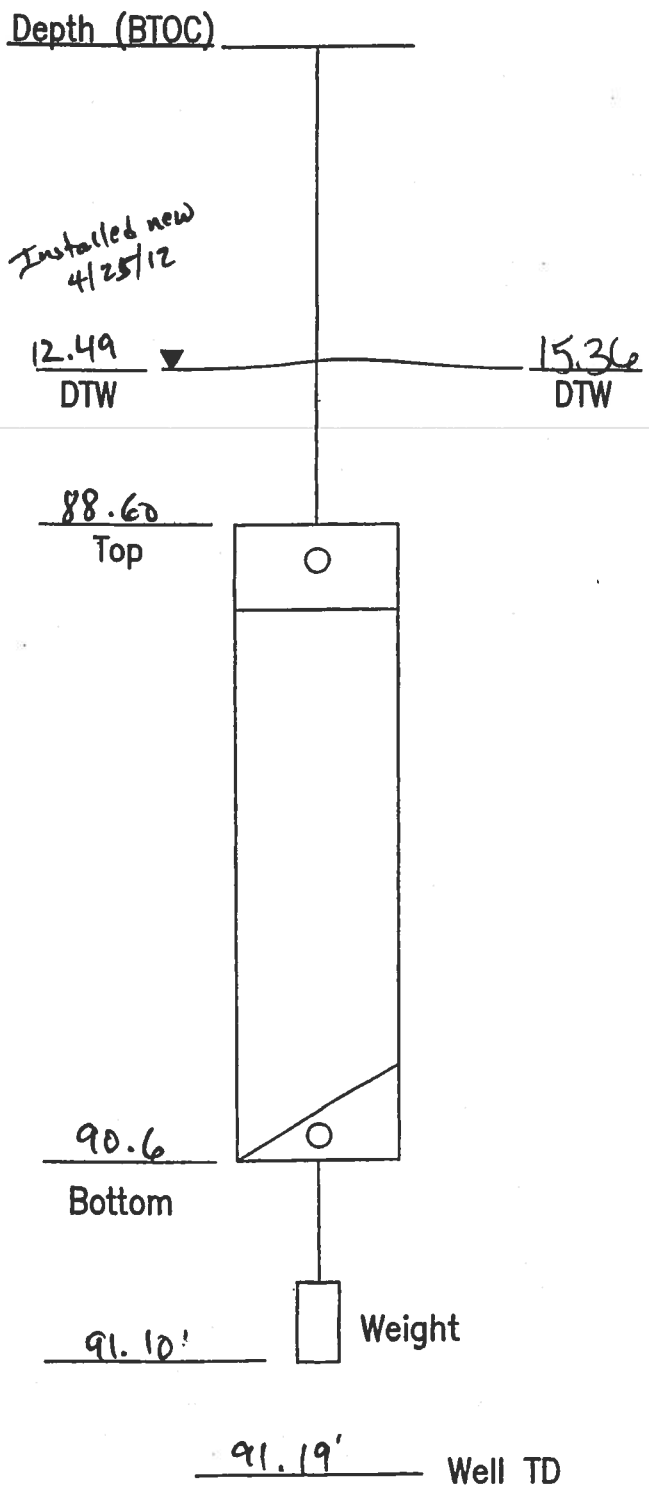
Well # PZ-39

Well Diameter 2"

Installation Date 4/25/12

Installation Time 0945

Job# 14495.05.2010.0010




## SAMPLE INFORMATION

Sample No. 1242057

Sample Time 1022

Sample Date 10/17/12

Analysis 8260C

## FIELD PARAMETERS

Dissolved Oxygen NA

ORP NA

pH NA

Biofilm Present (Y/N) N

Other NA

Samplers: RR, ST

DRAWING NAME: //projects/12040.77/BOC Field/BOC Field Forms/PDBSfieldform.dwg
DATE:01/25/2007 TIME:14:05 DRAWN BY: mbb

# Appendix C

# Chain-of-Custody Documentation

# CHAIN OF CUSTODY

Cooler 1 of 3

ALS Environmental

1317 South 13th Ave., Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

SR# _____ PAGE 1 OF 2 COC# _____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 1449505 2012 0010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY NAME | EA Engineering |
| ADDRESS | 720 4th St South, Suite 100 |
| CITY/STATE/ZIP | Kirkland, WA 98033 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # | 425-451-7400 FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | Kristina Beaulieu |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐ | Volatile Organics 624☐ 8260☒ 8260C | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCBs Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | Metals, (total or Dissolved) (See List below) | Cyanide☐ Hex-Chrom☐ 200.7 | (circle) pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS, Turb. | (circle) $NH_3$-N, COD, TKN, TOC, DOC, $NO_2$+$NO_3$, T-Phos | TOX 9020☐ AOX 1650☐ 506☐ | Alkalinity☐ $CO_3$☐ $HCO_3$☐ | Dioxins/Furans 1613☐ 8290☐ | Dissolved Gases $CO_2$☐ RSK 175☐ Methane☐ Ethane☐ Ethene☐ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242001 | 10/15/12 | 1328 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242002 | | 1415 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242003 | | 1347 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242004 | | 1510 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242005 | | 1358 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242006 | | 1010 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242007 | | 1408 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242008 | | 1720 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242009 | ↓ | 1352 | | W | 4 | | 3 | | | | | | 1 | | | | | | | | |
| 1242010 | 10/15/12 | — | | W | 2 | | 2 | | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

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

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

___ 24 hr. ___ 48 hr.

___ 5 day

X Standard (15 working days)

___ Provide FAX Results

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp. Blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

Cooler

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Kristina Beaulieu 10/17/12 0900 | | | |
| Signature Date/Time | Signature Date/Time | Signature Date/Time | Signature Date/Time |
| Kristina Beaulieu EA Engineering | | | |
| Printed Name Firm | Printed Name Firm | Printed Name Firm | Printed Name Firm |

# CHAIN OF CUSTODY

(Cooler 1 of 3) SR# _____

ALS Environmental

1317 South 13th Ave., Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 2 OF 2 COC# _____

PROJECT NAME: Boomsnub
PROJECT NUMBER: 1449505 2012 0010
PROJECT MANAGER: Cathy Bohlke
COMPANY NAME: EA Engineering
ADDRESS: 720 6th St South, Suite 100
CITY/STATE/ZIP: Kirkland, WA 98033
E-MAIL ADDRESS: CBohlke@pacest.com
PHONE # 425-451-7400 FAX # 425-451-7800
SAMPLER'S SIGNATURE: Kristina Beaulieu

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐ | Volatile Organics 624☐ 8260☒ 8260C 8021☐ BTEX☐ | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCBs Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | Metals, (Total or Dissolved) (See List below) 200.7 | Cyanide☐ Hex-Chrom☐ | (circle) pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS, Turb. | (circle) $NH_3$-N, COD, TKN, TOC, DOC, $NO_2$+$NO_3$, T-Phos | TOX 9020☐ AOX 1650☐ 506☐ | Alkalinity☐ $CO_3$☐ $HCO_3$☐ | Dioxins/Furans 1613☐ 8290☐ | Dissolved Gases $CO_2$☐ RSK 175☐ Methane☐ Ethane☐ Ethene☐ | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242011 | 10/15/12 | 1456 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | 2 | |
| 1242012 | 10/16/12 | 1010 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242013 | 10/15/12 | 1508 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242014 | 10/16/12 | 1120 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242016 | 10/16/12 | 1345 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242017 | 10/16/12 | 0904 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
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**REPORT REQUIREMENTS**

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

**INVOICE INFORMATION**

P.O. # 9028
Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

___ 24 hr. ___ 48 hr.
___ 5 day
X Standard (15 working days)
___ Provide FAX Results

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: Kristina Beaulieu — Date/Time: 10/17/12 0900 | Signature — Date/Time | Signature — Date/Time | Signature — Date/Time |
| Printed Name: Kristina Beaulieu — Firm: EA Engineering | Printed Name — Firm | Printed Name — Firm | Printed Name — Firm |

ALS Environmental

# CHAIN OF CUSTODY

Cooler 2 of 3

SR# _____

1317 South 13th Ave., Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 1 OF 2 COC# _____

PROJECT NAME: Boomsnub
PROJECT NUMBER: 1449505 2012 010
PROJECT MANAGER: Cathy Bohlke
COMPANY NAME: EA Engineering
ADDRESS: 720 6th St. South Suite 100
CITY/STATE/ZIP: Kirkland, WA 98033
E-MAIL ADDRESS: cbohlke@eaest.com
PHONE #: 425-451-7400 FAX #: 425-451-7800
SAMPLER'S SIGNATURE: Kristina Beaulieu Time Date

| SAMPLE I.D. | ~~DATE~~ | ~~TIME~~ | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ SIM PAH☐ | Volatile Organics 624☐ 8260☒ 8260C 8021☐ BTEX☐ | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCBs Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | Metals (Total or Dissolved) (See List below) | Cyanide☐ Hex-Chrom☐ | (circle) pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS, Turb. | (circle) $NH_3$-N, COD, TKN, TOC, DOC, $NO_2$+$NO_3$, T-Phos | TOX 9020☐ AOX 1650☐ 506☐ | Alkalinity ☐ $CO_3$ ☐ $HCO_3$ ☐ | Dioxins/Furans 1613☐ 8290☐ | Dissolved Gases $CO_2$☐ RSK 175☐ Methane☐ Ethane☐ Ethene☐ | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242015 | — | 10/5/12 | | W | 2 | | | 2 | | | | | | | | | | | | | | | | | |
| 1242018 | 1440 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242019 | 0918 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242020 | 1555 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242021 | 0931 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242022 | 1650 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242023 | 0940 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242025 | 0956 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242027 | 1015 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |
| 1242027 MS | 1015 | 10/16/12 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | |

**REPORT REQUIREMENTS**

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

**INVOICE INFORMATION**

P.O. # 9028
Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

___ 24 hr. ___ 48 hr.
___ 5 day
_X_ Standard (15 working days)
___ Provide FAX Results

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: Kristina Beaulieu | Signature: | Signature: | Signature: |
| Date/Time: 10/17/12 0900 | Date/Time: | Date/Time: | Date/Time: |
| Printed Name: Kristina Beaulieu | Printed Name: | Printed Name: | Printed Name: |
| Firm: EA Engineering | Firm: | Firm: | Firm: |

# CHAIN OF CUSTODY

ALS Environmental

1317 South 13th Ave., Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

SR# _____

PAGE 2 OF 2 COC# _____

| | |
|---|---|
| PROJECT NAME | Broadsnub |
| PROJECT NUMBER | 1449505 2012 010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY NAME | EA Engineering |
| ADDRESS | 720 6th St. South Suite 100 |
| CITY/STATE/ZIP | Kirkland, WA 98033 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # | 425-451-7400 FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | Kristina Beaulieu |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐ | Volatile Organics 624☐ 8260☒ 8260C 8021☐ BTEX☐ | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCBs Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | Metals, (Total or Dissolved) (See List below) 200.7 | Cyanide☐ Hex-Chrom☐ | (circle) pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS, Turb. | (circle) $NH_3$-N, COD, TKN, TOC, DOC, $NO_2$+$NO_3$, T-Phos | TOX 9020☐ AOX 1650☐ 506☐ | Alkalinity☐ $CO_3$☐ $HCO_3$☐ | Dioxins/Furans 1613☐ 8290☐ | Dissolved Gases $CO_2$☐ Ethane☐ Ethene☐ RSK 175☐ Methane☐ | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242027 MSD | 10/16/12 | 1015 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | | |
| 1242029 | 10/16/12 | 1020 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | | |
| 1242031 | ↓ | 1035 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | | |
| 12420 33 | ↓ | 1051 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | | |
| 1242035 | 10/16/12 | 1113 | | W | 4 | | | 3 | | | | | | 1 | | | | | | | | | | | | |
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**REPORT REQUIREMENTS**

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

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

___ III. CLP Like Summary (no raw data)

___ IV. Data Validation Report

X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

___ 24 hr. ___ 48 hr.

___ 5 day

X Standard (15 working days)

___ Provide FAX Results

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: Kristina Beaulieu | Signature | Signature | Signature |
| Date/Time: 10/17/12 0900 | Date/Time | Date/Time | Date/Time |
| Printed Name: Kristina Beaulieu | Printed Name | Printed Name | Printed Name |
| Firm: EA Engineering | Firm | Firm | Firm |

Cooler 3 of 3

# Columbia Analytical Services

# CHAIN OF CUSTODY

SR#:_____

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 1 OF 1 COC #_____

PROJECT NAME: Boomsnub
PROJECT NUMBER: 1449505 2012 010
PROJECT MANAGER: Cathy Bohlke
COMPANY/ADDRESS: EA Engineering
720 6th St South Suite 100
CITY/STATE/ZIP: Kirkland, WA 98033
E-MAIL ADDRESS: cbohlke@eaest.com
PHONE #: 425-451-7400 FAX #: 425-451-7800
SAMPLER'S SIGNATURE: Kristina Beaulieu

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐ | Volatile Organics 624 ☐ 8260 ☐ 8260C | Hydrocarbons (*see below) Gas ☐ 8021 ☐ BTEX ☐ | Diesel ☐ Oil ☐ | Fuel Fingerprint (FIQ) ☐ NW-HCID Screen | Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐ | PCB's Aroclors ☐ Congeners ☐ | Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐ | Chlorophenolics Tri ☐ Tetra ☐ - 8151M PCP ☐ | PAHS 8310 ☐ SIM ☐ | Metals, Total or Dissolved (See list below) | Cyanide ☐ | pH, Cond., Cl, SO4, PO4, F; NO3, BOD, TSS, TDS (circle) | NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3 | TOX 9020 ☐ AOX 1650 ☐ 506 ☐ | REMAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242037 | 10/16/12 | 1314 | | W | 4 | | 3 | | | | | | | | 1 | | | | | | |
| 1242039 | | 1325 | | W | 4 | | 3 | | | | | | | | 1 | | | | | | |
| 1242041 | | 1330 | | W | 4 | | 3 | | | | | | | | 1 | | | | | | |
| 1242043 | | 1337 | | W | 4 | | 3 | | | | | | | | 1 | | | | | | |
| 1242045 | | 1515 | | W | 3 | | 3 | | | | | | | | | | | | | | |
| 1242047 | | 1525 | | W | 3 | | 3 | | | | | | | | | | | | | | |
| 1242049 | | 1540 | | W | 3 | | 3 | | | | | | | | | | | | | | |
| 1242051 | | 1548 | | W | 3 | | 3 | | | | | | | | | | | | | | |
| 1242053 | | 1555 | | W | 3 | | 3 | | | | | | | | | | | | | | |
| 1242055 | | — | | W | 2 | | 2 | | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
X V. EDD

**INVOICE INFORMATION**

P.O. # 9028
Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

____ 24 hr. ____ 48 hr.
____ 5 Day
X Standard (10-15 working days)
____ Provide FAX Results

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

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Kristina Beaulieu 10/17/12 0900 | | | |
| Signature / Date/Time | Signature / Date/Time | Signature / Date/Time | Signature / Date/Time |
| Kristina Beaulieu / EA Engineering | Printed Name / Firm | Printed Name / Firm | Printed Name / Firm |

Cooler 1 of 2

# Columbia Analytical Services™

# CHAIN OF CUSTODY

SR#: _____

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 1 OF 3 COC # _____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 1449505 2012 010 |
| PROJECT MANAGER | Cathy Böhlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave., Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ | Volatile Organics 624☐ 8260☒ 8260C 8021☐ BTEX☐ | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHS 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) 200.7 | Cyanide☐ Hex-Chrom☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242024 | 10/17/12 | 1105 | | W | 4 | | 3 | | | | | | | 1 | | | | | | |
| 1242026 | 10/17/12 | 1150 | | W | 4 | | 3 | | | | | | | 1 | | | | | | |
| 1242026 MS | 10/17/12 | 1150 | | W | 4 | | 3 | | | | | | | 1 | | | | | | |
| 1242026 MSD | 10/17/12 | 1150 | | W | 4 | | 3 | | | | | | | 1 | | | | | | |
| 1242028 | 10/17/12 | 1200 | | W | 4 | | 3 | | | | | | | 1 | | | | | | |
| 1242030 | 10/17/12 | 1610 | | W | 4 | | 3 | | | | | | | 1 | | | | | | |
| 1242032 | 10/17/12 | 1710 | | W | 3 | | 3 | | | | | | | | | | | | | |
| 1242034 | 10/18/12 | 0852 | | W | 3 | | 3 | | | | | | | | | | | | | |
| 1242036 | 10/18/12 | 0900 | | W | 3 | | 3 | | | | | | | | | | | | | |
| 1242038 | 10/18/12 | 0906 | | W | 3 | | 3 | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

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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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: Sarah Thcomb | Signature: | Signature: | Signature: |
| Date/Time: 10/19/12 1047 | Date/Time: 10/19/12 1047 | Date/Time: | Date/Time: |
| Printed Name: SarahThcomb | Printed Name: | Printed Name: | Printed Name: |
| Firm: EA Engineering | Firm: AES | Firm: | Firm: |

Cooler 1 of 2

# Columbia Analytical Services

# CHAIN OF CUSTODY

SR#:_____

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 2 OF 3 COC #_____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 1449505 2012 010 |
| PROJECT MANAGER | Cathy Böhlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave., Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | Sarah Titrud |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ | Volatile Organics 624☐ 8260☐ | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | Fuel Fingerprint (FIQ) ☐ NW-HCID Screen | Oil & Grease/TRPH 1664 HEM☐ | 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHs 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) | Cyanide☐ Hex-Chrom☐ | pH, Cond, Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242040 | 10/18/12 | 0914 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242042 | 10/18/12 | 0919 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242044 | 10/18/12 | 0929 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242046 | 10/18/12 | 0935 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242048 | 10/18/12 | 0940 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242050 | 10/18/12 | 0950 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242052 | 10/18/12 | 1000 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242054 | 10/18/12 | 1010 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242056 | 10/18/12 | 1020 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242057 | 10/17/12 | 1022 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

____ 24 hr. ____ 48 hr.

____ 5 Day

X Standard (10-15 working days)

____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

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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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

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- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: Sarah Titrud | Signature: | Signature: | Signature: |
| Date/Time: 10/19/12 1047 | Date/Time: 10/19/12 1047 | Date/Time: | Date/Time: |
| Printed Name: Sarah Titrud | Printed Name: | Printed Name: | Printed Name: |
| Firm: EA Engineering | Firm: ALS | Firm: | Firm: |

BCOC #1 03/10

Cooler 1 of 2

# CHAIN OF CUSTODY

Columbia Analytical Services™

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

SR#: _____

PAGE 3 OF 3 COC # _____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 1449505 2012 010 |
| PROJECT MANAGER | Cathy Böhlke |
| COMPANY/ADDRESS | EA Engineering |
| 2200 6th Ave. Suite 707 | |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | ~~cathyb~~ cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ | Volatile Organics 624☐ 8260☒ 8260C | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | BTEX☐ 8021☐ | Fuel Fingerprint (FIQ) NW-HCID Screen | Oil & Grease/TRPH 1664 HEM☐ | 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHS 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) | Cyanide☐ Hex-Chrom☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242058 | 10/18/12 | 1045 | | W | 3 | | 3 | | | | | | | | | | | | | | | |
| 1242059 | 10/17/12 | 1033 | | W | 3 | | 3 | | | | | | | | | | | | | | | |
| 1242060 | 10/18/12 | 1050 | | W | 3 | | 3 | | | | | | | | | | | | | | | |
| 1242069 | 10/17/12 | — | | W | 2 | | 2 | | | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

___ 24 hr. ___ 48 hr.

___ 5 Day

X Standard (10-15 working days)

___ Provide FAX Results

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: [signature] | Signature: [signature] | Signature: | Signature: |
| Date/Time: 10/19/12 1047 | Date/Time: 10/19/12 1047 | Date/Time: | Date/Time: |
| Printed Name: Sarah Titrom | Printed Name: [illegible] | Printed Name: | Printed Name: |
| Firm: EA Engineering | Firm: ACS | Firm: | Firm: |

BCOC #1 03/10

Cooler 2 of 2

# Columbia Analytical Services™

# CHAIN OF CUSTODY

SR#:_____

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PAGE 1 OF 2 COC #_____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 1449505 2012 010 |
| PROJECT MANAGER | Cathy Böhlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave., Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ | Volatile Organics 624☐ 8270LL☐ | Hydrocarbons 8260☒ 8021☐ BTEX☐ Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHS 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) | Cyanide☐ Hex-Chrom☐ | pH, Cond, Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242061 | 10/17/12 | 1047 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242062 | 10/18/12 | 1105 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242063 | 10/17/12 | 1106 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242064 | 10/18/12 | 1110 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242065 | 10/17/12 | 1517 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242066 | 10/18/12 | 1115 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242067 | 10/17/12 | 1527 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242068 | 10/18/12 | 1230 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242070 | 10/18/12 | 1240 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242071 | 10/18/12 | 1252 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

____ 24 hr. ____ 48 hr.

____ 5 Day

X Standard (10-15 working days)

____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

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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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: 10/19/12 1047 | Signature: 10/19/12 1047 | Signature: | Signature: |
| Printed Name: Sarah Titcomb | Printed Name: | Printed Name: | Printed Name: |
| Firm: EA Engineering | Firm: ALS | Firm: | Firm: |
| Date/Time | Date/Time | Date/Time | Date/Time |

BCOC #1 03/10

Cooler 2 of 2

# Columbia Analytical Services

# CHAIN OF CUSTODY

SR#:_____

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 2 OF 2 COC #_____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 1449505 2012 010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave., Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # 425-451-7800 |
| SAMPLER'S SIGNATURE | |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ | Volatile Organics 624☐ 8260☐ 8260C | Hydrocarbons (*see below) Gas☐ 8021☐ BTEX☐ | ☐Fuel Fingerprint (FIQ) ☐NW-HCID Screen Diesel☐ Oil☐ | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHS 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) | Cyanide☐ Hex-Chrom☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1242072 | 10/18/12 | 1258 | | W | 3 | | 3 | | | | | | | | | | | | | | | | | |
| 1242073 | 10/18/12 | — | | W | 2 | | 2 | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | |

**REPORT REQUIREMENTS**

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. Data Validation Report (includes all raw data)
- ___ IV. CLP Deliverable Report
- X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

____ 24 hr. ____ 48 hr.

____ 5 Day

X Standard (10-15 working days)

____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

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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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- Temp blank included
- Provide PDF deliverable

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Date/Time 10/19/12 1047 | Date/Time 10/19/12 1047 | Date/Time | Date/Time |
| Printed Name Sarah Titcomb | Printed Name | Printed Name | Printed Name |
| Firm EA Engineering | Firm | Firm | Firm |

# Columbia Analytical Services

# CHAIN OF CUSTODY

cooler 1 of 2

SR#: _____

PAGE 1 OF 2 COC #: _____

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| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 14495.05 2012 0010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY/ADDRESS | EA Engineering<br>2200 6th Ave, Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # |
| SAMPLER'S SIGNATURE | Mark Blumstein |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐ | Volatile Organics 624 ☐ 8260 ☐ | Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ | 8021 ☐ BTEX ☐ | Fuel Fingerprint (FIQ) NW-HCID Screen | Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐ | PCB's Aroclors ☐ Congeners ☐ | Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐ | Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐ | PAHS 8310 ☐ SIM ☐ | Metals, (total or Dissolved) (See list below) | Cyanide ☐ Hex-Chrom ☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020 ☐ AOX 1650 ☐ 506 ☐ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1243001 | 10/22/12 | — | | W | 2 | | X | | | | | | | | | | | | | | |
| 1243002 | | 1218 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243003 | | 1540 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243003 MS | | 1540 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243003 MSD | | 1540 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243004 | | 1545 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243005 | | 1415 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243006 | | 1658 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243007 | 10/23/12 | 1030 | | | 4 | | X | | | | | | | | | X | | | | | |
| 1243008 | | 1040 | | | 1 | | | | | | | | | | | X | | | | | Dissolved Cr. |

**REPORT REQUIREMENTS**

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

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

X III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

____ 24 hr. ____ 48 hr.

____ 5 Day

X Standard (10-15 working days)

____ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

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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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Temp Blank included

Provide PDF Deliverable

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Signature: Mark Blumstein | Signature: | Signature: | Signature: |
| Date/Time: 10/24/12 1600 | Date/Time: | Date/Time: | Date/Time: |
| Printed Name: Mark Blumstein | Printed Name: | Printed Name: | Printed Name: |
| Firm: EA Eng. | Firm: | Firm: | Firm: |

RCOC #1 07/09

# Columbia Analytical Services

# CHAIN OF CUSTODY

cooler 1 of 2

SR#: _____

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE 2 OF 2 COC # _____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 14495.05 2012 0010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave, Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # |
| SAMPLER'S SIGNATURE | Mark Blinstrub |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ | Volatile Organics 624☐ 8260☐ | Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐ | 8021☐ BTEX☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen | Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHS 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) | Cyanide☐ Hex-Chrom☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1243009 | 10/23/12 | 1140 | | W | 4 | | X | | | | | | | X | | | | | |
| 1243010 | ↓ | 1340 | | ↓ | 4 | | X | | | | | | | X | | | | | |

**REPORT REQUIREMENTS**

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

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

X III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

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____ 24 hr. ____ 48 hr.

____ 5 Day

X Standard (10-15 working days)

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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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Mark Blinstrub 10/24/12 1600 | | | |
| Signature / Date/Time | Signature / Date/Time | Signature / Date/Time | Signature / Date/Time |
| Mark Blinstrub / EA Eng, | | | |
| Printed Name / Firm | Printed Name / Firm | Printed Name / Firm | Printed Name / Firm |

# Columbia Analytical Services™

# CHAIN OF CUSTODY

Cooler 2 of 2

SR#:_____

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PAGE 1 OF 2 COC #_____

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 14495.05 2012 0010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave, Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # | 425-451-7400 |
| FAX # | — |
| SAMPLER'S SIGNATURE | Mark Blinstrub |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625☐ 8270☐ | Volatile Organics 624☐ 8260☐ | Hydrocarbons (*see below) Gas☐ | 8021☐ BTEX☐ Diesel☐ Oil☐ | Fuel Fingerprint (FIQ) NW-HCID Screen | Oil & Grease/TRPH 1664 HEM☐ | 1664 SGT☐ | PCB's Aroclors☐ Congeners☐ | Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐ | Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐ | PAHS 8310☐ SIM☐ | Metals, Total or Dissolved (See list below) | Cyanide☐ Hex-Chrom☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020☐ AOX 1650☐ 506☐ | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1243011 | 10/23/12 | 1440 | | W | 3 | | | X | | | | | | | | | | | | | | | | | | | |
| 1243012 | | 1600 | | | 3 | | | X | | | | | | | | | | | | | | | | | | | |
| 1243013 | | 1620 | | | 3 | | | X | | | | | | | | | | | | | | | | | | | |
| 1243014 | 10/24/12 | 0945 | | | 4 | | | X | | | | | | | | | X | | | | | | | | | | |
| 1243015 | | 1050 | | | 1 | | | | | | | | | | | | X | | | | | | | | | | |
| 1243016 | | 1120 | | | 4 | | | X | | | | | | | | | X | | | | | | | | | | |
| 1243017 | | 1145 | | | 4 | | | X | | | | | | | | | X | | | | | | | | | | |
| 1243017 MS | | 1145 | | | 4 | | | X | | | | | | | | | X | | | | | | | | | | |
| 1243017 MSD | | 1145 | | | 4 | | | X | | | | | | | | | X | | | | | | | | | | |
| 1243018 | | 1400 | | | 1 | | | | | | | | | | | | X | | | | | | | | | | |

**REPORT REQUIREMENTS**

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

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

X III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

X V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

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*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Temp Blank Included

Provide PDF Deliverable

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Mark Blinstrub 10/24/12 1600 | | | |
| Signature / Date/Time | Signature / Date/Time | Signature / Date/Time | Signature / Date/Time |
| Mark Blinstrub EA Eng. | | | |
| Printed Name / Firm | Printed Name / Firm | Printed Name / Firm | Printed Name / Firm |

# Columbia Analytical Services

# CHAIN OF CUSTODY

Cooler 2 of 2

SR#: _____

PAGE 2 OF 2 COC #: _____

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

| | |
|---|---|
| PROJECT NAME | Boomsnub |
| PROJECT NUMBER | 14495.05 2012 0010 |
| PROJECT MANAGER | Cathy Bohlke |
| COMPANY/ADDRESS | EA Engineering |
| | 2200 6th Ave, Suite 707 |
| CITY/STATE/ZIP | Seattle, WA 98121 |
| E-MAIL ADDRESS | cbohlke@eaest.com |
| PHONE # 425-451-7400 | FAX # — |
| SAMPLER'S SIGNATURE | Mark Blinstrub |

| SAMPLE I.D. | DATE | TIME | LAB I.D. | MATRIX | NUMBER OF CONTAINERS | Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐ | Volatile Organics (8260 ☐) 624 ☐ 8021 ☐ BTEX ☐ | Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ | Fuel Fingerprint (FIQ) ☐ NW-HCID Screen | Oil & Grease/TRPH 1664 SGT ☐ 1664 HEM ☐ | PCB's Aroclors ☐ Congeners ☐ | Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐ | Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐ | PAHS 8310 ☐ SIM ☐ | Metals (Total or Dissolved) (See list below) | Cyanide ☐ | Hex-Chrom ☐ | pH, Cond., Cl, $SO_4$, $PO_4$, F, $NO_2$, $NO_3$, BOD, TSS, TDS (circle) | $NH_3$-N, COD, Total-P, TKN, TOC, DOC (circle) $NO_2$+$NO_3$ | TOX 9020 ☐ AOX 1650 ☐ 506 ☐ | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1243019 | 10/24/12 | 1445 | | W | 4 | | | X | | | | | | | | X | | | | | | | | | |
| 1243020 | 10/24/12 | — | | W | 2 | | | X | | | | | | | | | | | | | | | | | |
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**REPORT REQUIREMENTS**

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

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

_X_ III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

_X_ V. EDD

**INVOICE INFORMATION**

P.O. # 9028

Bill To: EA Engineering

**TURNAROUND REQUIREMENTS**

____ 24 hr. ____ 48 hr.

____ 5 Day

_X_ Standard (10-15 working days)

____ Provide FAX Results

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

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

| RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: |
|---|---|---|---|
| Mark Blinstrub 10/24/12 1600 | | | |
| Signature / Date/Time | Signature / Date/Time | Signature / Date/Time | Signature / Date/Time |
| Mark Blinstrub / EA Engineering | | | |
| Printed Name / Firm | Printed Name / Firm | Printed Name / Firm | Printed Name / Firm |

RCOC #1 07/09

# Appendix D

# Analytical Results Summary

# Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-1A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242038 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 6.8 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.93 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 1.4 | | ug/l | 56-23-5 |
| 8260C | CFC-11 | 11 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.39 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 1.4 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 44 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-2A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242040 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.53 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.81 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.78 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 14 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-2A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | FD | | |
| Sample ID | 1242042 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.49 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.11 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.72 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.8 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 14 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-2B | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242044 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.4 | J | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-3A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242054 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.15 | J | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.4 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.48 | J | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-6A | Sampling Method | LOW FLOW |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242016 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 6.9 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.42 | J | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-7A | Sampling Method | LOW FLOW |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242018 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2.9 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.24 | J | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-8A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242056 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.33 | J | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-10A | Sampling Method | LOW FLOW |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242014 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 18.7 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.32 | J | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-11A | Sampling Method | LOW FLOW |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242012 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.41 | J | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-12A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242050 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.19 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.53 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.39 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.27 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.56 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 33 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-13A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242034 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.24 | J | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.17 | J | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-16 | Sampling Method | PDB |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242061 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 2.2 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.66 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.23 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 1.8 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-17 | Sampling Method | LOW FLOW |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242032 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 2.5 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 1.2 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.9 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 210 | D | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-18 | Sampling Method | LOW FLOW |
| Sample Date | 10/23/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243012 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.16 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.43 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.15 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 39 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-19A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242052 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.33 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 1.2 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-24 | Sampling Method | LOW FLOW |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242026 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 8.8 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.37 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1.6 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.14 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 3.3 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 11 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | AMW-24 |
| Sample Date | 10/17/2012 |
| Sample Type | FD |
| Sample ID | 1242028 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 7.5 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.37 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1.6 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.14 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 3.4 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 11 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-25 | Sampling Method | LOW FLOW |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242008 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 1.9 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-26 | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242036 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.1 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.17 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.13 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.52 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | AMW-27 |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242021 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2.9 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.12 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.28 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 2.2 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 6.8 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-42 | Sampling Method | EXTRACTION W |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242011 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 21.3 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.08 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 1.2 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-50 | Sampling Method | LOW FLOW |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242002 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2.1 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.13 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-51 | Sampling Method | LOW FLOW |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242022 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2.1 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.09 | J | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.24 | J | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-52A | Sampling Method | PDB |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242047 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-53A | Sampling Method | PDB |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242049 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 1.7 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.37 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 4.8 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.28 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.65 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 12 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-54A | Sampling Method | PDB |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242051 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.16 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 1.8 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-55A | Sampling Method | PDB |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242053 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.28 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 1.3 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-56A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242046 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.1 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.19 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.4 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 2.7 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-56A | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | FD | | |
| Sample ID | 1242048 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.12 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.24 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.38 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 2.7 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-58 | Sampling Method | PDB |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242067 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.15 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.1 | J | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-59 | Sampling Method | PDB |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242045 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 11 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 7.3 | | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.63 | | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 92 | D | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.27 | J | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-61 | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242072 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.1 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.44 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 2.5 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 5.4 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | AMW-62 |
| Sample Date | 10/15/2012 |
| Sample Type | N |
| Sample ID | 1242006 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 1.5 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | AMW-64 | Sampling Method | LOW FLOW |
| Sample Date | 10/23/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243011 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 1.2 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 1.5 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 1 | | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.27 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.16 | J | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 110 | D | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | CPU-2 | Sampling Method | LOW FLOW |
| Sample Date | 10/22/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243006 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | CPU-3D | Sampling Method | LOW FLOW |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242004 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 1.8 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.08 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | CPU-10 | Sampling Method | LOW FLOW |
| Sample Date | 10/23/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243007 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 23.2 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | CPU-10 |
| Sample Date | 10/23/2012 |
| Sample Type | N |
| Sample ID | 1243008 |

Sampling Method: LOW FLOW

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | D | CHROMIUM | 1 | UJ | ug/l | 7440-47-3 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | CPU-12 | Sampling Method | PDB |
| Sample Date | 10/23/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243013 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 4.9 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | CPU-13 | Sampling Method | EXTRACTION W |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242025 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 16.4 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.28 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.69 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 1.5 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | CPU-14 | Sampling Method | LOW FLOW |
| Sample Date | 10/23/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243009 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 37.1 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.14 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.11 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.37 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 5.2 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-1A |
| Sample Date | 10/24/2012 |
| Sample Type | N |
| Sample ID | 1243014 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 19.3 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.53 | | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.83 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 6.1 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-2A | Sampling Method | LOW FLOW |
| Sample Date | 10/24/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243017 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 190 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.2 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.78 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 1.7 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-3A |
| Sample Date | 10/24/2012 |
| Sample Type | N |
| Sample ID | 1243015 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 75.4 | | ug/l | 7440-47-3 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-3B | Sampling Method | PDB |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242065 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.89 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 2 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-4A |
| Sample Date | 10/24/2012 |
| Sample Type | N |
| Sample ID | 1243018 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 362 | | ug/l | 7440-47-3 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-4B | Sampling Method | LOW FLOW |
| Sample Date | 10/24/2012 | | |
| Sample Type | N | | |
| Sample ID | 1243019 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 407 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.64 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 4.2 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-6B | Sampling Method | EXTRACTION W |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242003 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 17.2 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.26 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.61 | | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.79 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 4.8 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-6B | Sampling Method | EXTRACTION W |
| Sample Date | 10/15/2012 | | |
| Sample Type | FD | | |
| Sample ID | 1242009 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 17.8 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.27 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.69 | | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.16 | J | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.78 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 5.1 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-8B | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242058 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.21 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 1.3 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 2.4 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-9B | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242060 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.25 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.11 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 1.8 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.13 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 2 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 3.7 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-10B | Sampling Method | EXTRACTION W |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242005 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 36.2 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.11 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.24 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.18 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1.5 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 16 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-10C | Sampling Method | EXTRACTION W |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242007 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 93.6 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.17 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.97 | | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 1 | | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 3 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-12C | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242062 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.55 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 1.4 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-13C | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242064 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.13 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.58 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 4.6 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-13C | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | FD | | |
| Sample ID | 1242066 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.13 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.67 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 5.8 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-14C |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242039 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 69.6 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.12 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.16 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 13 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-14C |
| Sample Date | 10/16/2012 |
| Sample Type | FD |
| Sample ID | 1242041 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 69.6 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.09 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.11 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.18 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.15 | J | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1.2 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 19 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-14E |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242043 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 41.1 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.29 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 3.7 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.43 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 3.3 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 3.9 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.18 | J | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 67 | D | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-15E | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242070 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.14 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.12 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.13 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.3 | J | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 4.2 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-16E | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242068 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.14 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.16 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.42 | J | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-18D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242037 |
| Sampling Method | EXTRACTION W |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 107 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.43 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.85 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 1.1 | | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.65 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 2.4 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.15 | J | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 49 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-18E | Sampling Method | PDB |
| Sample Date | 10/18/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242071 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 14 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 3.7 | | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.46 | J | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 170 | D | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.21 | J | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-19D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242035 |
| Sampling Method | EXTRACTION W |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 102 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.11 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1.7 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.14 | J | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.46 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.45 | J | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1.9 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 34 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-20D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242033 |
| Sampling Method | EXTRACTION W |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 63.5 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.15 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 3.2 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.43 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.66 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1.2 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 45 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-21D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242027 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 12 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.2 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.32 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.61 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.13 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 5.2 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-21D |
| Sample Date | 10/16/2012 |
| Sample Type | FD |
| Sample ID | 1242029 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 11.3 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.18 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.32 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.61 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.13 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 5.3 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-22D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242031 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 25.4 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.22 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.21 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 1.7 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 5.6 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-23D | Sampling Method | PDB |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242063 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.27 | J | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.54 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.29 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.27 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 1.4 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-25D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242023 |
| Sampling Method | EXTRACTION W |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2.7 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.15 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.24 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.25 | J | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 1.3 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-26D |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242017 |
| Sampling Method | EXTRACTION W |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 11.7 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.29 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.3 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.84 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-27D |
| Sample Date | 10/22/2012 |
| Sample Type | N |
| Sample ID | 1243003 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 12.9 | UJ | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.84 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-27D |
| Sample Date | 10/22/2012 |
| Sample Type | FD |
| Sample ID | 1243004 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 12.2 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.09 | J | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.89 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-31 |
| Sample Date | 10/15/2012 |
| Sample Type | N |
| Sample ID | 1242013 |

Sampling Method: EXTRACTION W

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 11.4 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.12 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.26 | J | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-33 |
| Sample Date | 10/16/2012 |
| Sample Type | N |
| Sample ID | 1242020 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 3.2 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.2 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1.4 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.13 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 2.4 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.13 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 11 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-34 |
| Sample Date | 10/17/2012 |
| Sample Type | N |
| Sample ID | 1242024 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 0.8 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | MW-35 |
| Sample Date | 10/22/2012 |
| Sample Type | N |
| Sample ID | 1243002 |
| Sampling Method | LOW FLOW |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 16.5 | UJ | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.09 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.16 | J | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.44 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 5.4 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-38 | Sampling Method | PDB |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242059 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.69 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.33 | J | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.22 | J | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.24 | J | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 1.7 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 7.4 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | MW-49 | Sampling Method | EXTRACTION W |
| Sample Date | 10/16/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242019 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 9.3 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.27 | J | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 1.1 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | PW-1B | Sampling Method | EXTRACTION W |
| Sample Date | 10/15/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242001 | | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 34.1 | | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.12 | J | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.69 | | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 3.1 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | | | |
|---|---|---|---|
| Sampling Location | PZ-39 | Sampling Method | PDB |
| Sample Date | 10/17/2012 | | |
| Sample Type | N | | |
| Sample ID | 1242057 | | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 1.1 | | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 4.5 | | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 9.4 | | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 1.1 | | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 1.6 | | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 54 | | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | BENNETT |
| Sample Date | 10/17/2012 |
| Sample Type | N |
| Sample ID | 1242030 |
| Sampling Method | DOMESTIC |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 5 | U | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.34 | J | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 1.1 | | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 2.4 | | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 6.9 | | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/22/2012 |
| Sample Type | FB |
| Sample ID | 1243005 |
| Sampling Method | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 3.4 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/23/2012 |
| Sample Type | FB |
| Sample ID | 1243010 |
| Sampling Method | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 2.5 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 0.12 | J | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/24/2012 |
| Sample Type | FB |
| Sample ID | 1243016 |
| Sampling Method | |

| | | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|---|
| 200.7 | T | CHROMIUM | 1.5 | J | ug/l | 7440-47-3 |
| 8260C | | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/15/2012 |
| Sample Type | TB |
| Sample ID | 1242010 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/15/2012 |
| Sample Type | TB |
| Sample ID | 1242015 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/16/2012 |
| Sample Type | TB |
| Sample ID | 1242055 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/17/2012 |
| Sample Type | TB |
| Sample ID | 1242069 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/18/2012 |
| Sample Type | TB |
| Sample ID | 1242073 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/22/2012 |
| Sample Type | TB |
| Sample ID | 1243001 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

## Groundwater Analysis for Metals and VOCs

| | |
|---|---|
| Sampling Location | |
| Sample Date | 10/24/2012 |
| Sample Type | TB |
| Sample ID | 1243020 |
| Sampling Method | |

| | Analyte | Result | Lab/Validation Qualifier | Unit of Measure | CAS Number |
|---|---|---|---|---|---|
| 8260C | 1,1,1-TRICHLOROETHANE | 0.5 | U | ug/l | 71-55-6 |
| 8260C | 1,1,2,2-TETRACHLOROETHANE | 0.5 | U | ug/l | 79-34-5 |
| 8260C | 1,1-DICHLOROETHYLENE | 0.5 | U | ug/l | 75-35-4 |
| 8260C | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 2 | U | ug/l | 96-12-8 |
| 8260C | 1,2-DICHLOROETHANE | 0.5 | U | ug/l | 107-06-2 |
| 8260C | BROMODICHLOROMETHANE | 0.5 | U | ug/l | 75-27-4 |
| 8260C | CARBON TETRACHLORIDE | 0.5 | U | ug/l | 56-23-5 |
| 8260C | CFC-11 | 0.5 | U | ug/l | 75-69-4 |
| 8260C | CHLORODIBROMOMETHANE | 0.5 | U | ug/l | 124-48-1 |
| 8260C | CIS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-59-2 |
| 8260C | DICHLOROMETHANE | 2 | U | ug/l | 75-09-2 |
| 8260C | HEXACHLORO-1,3-BUTADIENE | 2 | U | ug/l | 87-68-3 |
| 8260C | TETRACHLOROETHENE | 0.5 | U | ug/l | 127-18-4 |
| 8260C | TRANS-1,2-DICHLOROETHENE | 0.5 | U | ug/l | 156-60-5 |
| 8260C | TRICHLOROETHYLENE | 0.5 | U | ug/l | 79-01-6 |
| 8260C | VINYL CHLORIDE | 0.5 | U | ug/l | 75-01-4 |

# Appendix E

# Northern Plume Investigation Summary

# APPENDIX E
# NORTHERN PLUME INVESTIGATION SUMMARY

## 1. INTRODUCTION

This summary provides the analytical results from the latest round of sampling of monitoring wells in the area of the Northern Plume. This plume is north of the Boomsnub/Airco Superfund Site (Site) Operable Unit (OU)-3 trichloroethene (TCE) and chromium plumes, which are referred to collectively as the OU-3 plume. Previous sampling results for wells in the Northern Plume area were reported in the letter report, *Results of Quarterly Monitoring Well Sampling – Summer 2012, Northern Plume Area* (EA 2012[1]).

Monitoring data indicate that the OU-3 TCE and chromium plumes have shown significant decreases in concentration and size since 1995 (EA 2013[2]). In 2007 and 2008, however, routine monitoring data showed an unexpected increase in the TCE concentration in groundwater samples from well AMW-18, located north of the boundary of the OU-3 Plume.

In May 2008, a direct push drilling and sampling investigation was performed to evaluate the depth and concentration of TCE in groundwater in the vicinity of well AMW-18, and to evaluate possible source areas for the TCE detected in this well. The source of the TCE groundwater contamination in this area was not identified; however, based on the data, it was concluded that the source does not appear to be the same as for the OU-3 plume (EA 2008[3]).

Well AMW-17 is located approximately 400 ft downgradient of well AMW-18. TCE concentrations in this well had been below the Boomsnub/Airco Site-specific cleanup level since 1999. However, in Fall 2010, TCE in groundwater from this well increased to a concentration exceeding the Site cleanup level, indicating the apparent arrival of the Northern Plume at the AMW-17 location. The TCE concentration in groundwater from this well increased significantly during subsequent sampling events.

The U.S. Environmental Protection Agency (EPA) and Linde performed a joint investigation of the Northern Plume area in May 2011 to get a better understanding of the source, extent, and concentrations of VOCs in this plume. Results were provided in a separate report (EA 2011[4]).

A new monitoring well (AMW-64) was installed in February 2012, at the request of the EPA, to monitor the Northern Plume northwest of well AMW-17. Results of samples collected from this well in March 2012 indicate elevated concentrations of TCE at 190 micrograms per liter (µg/L).

[1] EA 2012. *Results of Quarterly Monitoring Well Sampling – Summer 2012, Northern Plume Area, Hazel Dell, Washington*. 26 September.
[2] EA 2013. *2011 Annual Status Report for the Boomsnub/Airco Superfund Site, Hazel Dell, Washington.* Revision 1. January.
[3] EA 2008. *AMW-18 Area Investigation Report, Boomsnub/Airco Superfund Site, Hazel Dell, Washington*. Revision 0. August.
[4] EA 2011. *Northern Plume Investigation Report, Hazel Dell, Washington*. Revision 1. December.

The Northern Plume continues to be monitored along with the OU-3 plume to evaluate potential impacts to the Site and treatment system.

Wells AMW-17, AMW-18, and AMW-64 were sampled in early March 2012, shortly after the installation of well AMW-64, and quarterly thereafter. During each of these events, well AMW-17 was sampled using a dedicated submersible pump and the other two wells were sampled using non-dedicated submersible pumps. The wells were sampled most recently in October 2012, during the Fall semiannual sampling event.

## 2. ANALYTICAL RESULTS

The analytical results for Fall 2012, along with previous sampling results, are summarized in Table E-1 (well AMW-18), Table E-2 (well AMW-17), and Table E-3 (well AMW-64). No quality assurance/quality control issues were noted which would impact the analytical results.

### 2.1 Well AMW-18

TCE was detected at a concentration of 39 µg/L in groundwater from well AMW-18 in Fall 2012 (Table E-1). This is a decrease from the concentration detected during the previous sampling event in July 2012, but is still well above the TCE cleanup level of 5 µg/L. Three other VOCs were detected at concentrations lower than previous results and below their respective cleanup levels: tetrachloroethene (PCE) at a concentration of 0.15 J µg/L; 1,1,1-trichloroethane (1,1,1-TCA) at a concentration of 0.16 J µg/L; and trichlorofluoromethane (CFC-11) at a concentration of 0.43 J µg/L. Results for these three VOCs were reported as estimated concentrations, less than the method reporting limit but greater than or equal to the method detection limit, and qualified with a "J".

### 2.2 Well AMW-17

TCE was detected at a concentration of 210 µg/L in the groundwater sample collected from well AMW-17 in Fall 2012 (Table E-2). This is the same concentration as detected in July 2012. Concentrations of PCE (0.90 µg/L) and 1,1,1-TCA (2.5 µg/L) were similar to previous results and below their respective cleanup levels. The concentration of 1,1-DCE (1.2 µg/L) was similar to the previous result and exceeds the cleanup level of 1 µg/L.

### 2.3 Well AMW-64

TCE was detected at a concentration of 110 µg/L in the groundwater sample collected from well AMW-64 in Fall 2012 (Table E-3). This is a decrease from the concentration detected during the previous sampling event in July 2012, but is still well above the TCE cleanup level of 5 µg/L. Four other VOCs were detected at concentrations similar to or lower than previous results: PCE at 0.27 J µg/L, 1,1,1-TCA at 1.2 µg/L, 1,1-DCE at 1.5 µg/L, and cis-1,2-dichloroethene (cis-1,2-DCE) at 1.0 µg/L. The 1,1-DCE concentration exceeded the 1,1-DCE Site cleanup level of 1 µg/L.

## 3. CONCLUSIONS

A review of the historical TCE results for groundwater samples collected from well AMW-18 (Table E-1) shows that the concentration was 1.1 µg/L or less, prior to October 2006. The TCE concentration increased rapidly between October 2006 (5.1 µg/L) and October 2007 (330 µg/L). TCE concentrations in this well peaked in January and May 2008 (both at 460 µg/L). TCE concentrations in groundwater from well AMW-18 have decreased significantly between May 2008 and the most recent sampling event (Fall 2012). However, the current concentration of 39 µg/L remains well above the TCE cleanup level of 5 µg/L. Concentrations of PCE, 1,1,1-TCA, 1,1-DCE, and CFC-11 detected in Fall 2012 do not exceed their respective cleanup levels.

Historical TCE results for groundwater samples collected from well AMW-17 (Table E-2) indicate that TCE concentrations were below the cleanup level from October 1999 through April 2010. However, in October 2010, the TCE concentration increased to 28 µg/L, which was above the 5 µg/L cleanup level. The TCE concentration has since continued to increase to 210 µg/L. The concentration of 1,1-DCE detected in Fall 2012 (1.2 µg/L) also exceeds the 1,1-DCE cleanup level of 1 µg/L. Concentrations of PCE and 1,1,1-TCA detected in Fall 2012 do not exceed their respective cleanup levels.

Well AMW-64 has been sampled four times since it was installed in February 2012. The TCE concentration detected in March 2012, the first time the well was sampled, was 190 µg/L. The TCE concentration has been on a decreasing trend since that time. The TCE concentration of 110 µg/L detected in Fall 2012 remains well above the Site cleanup level. The concentration of 1,1-DCE detected in Fall 2012 (1.5 µg/L) also exceeds the 1,1-DCE cleanup level of 1 µg/L. Concentrations of PCE, 1,1,1-TCA, and cis-1,2-DCE detected in Fall 2012 do not exceed their respective cleanup levels.

Wells AMW-17, AMW-18, and AMW-64 are currently sampled on a quarterly frequency. Results for the Spring and Fall 2013 sampling events will be included in the semiannual groundwater sampling reports. Results of the Winter and Summer 2013 sampling events will be summarized in a letter report to EPA.

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## Table E-1. Historical VOC Concentrations in Well AMW-18 Groundwater Samples (in µg/L)

| Date Sampled | TCE | PCE | 1,1,1-TCA | 1,1-DCE | cis-1,2-DCE | CFC-11 |
|---|---|---|---|---|---|---|
| Apr-95 | 0.73 J | 1.0 U | 2.9 | 0.87 J | 1.0 U | 1.0 UJ |
| Oct-95 | 0.3 J | 1.0 U | 1.0 | 0.53 J | 1.0 U | 1.0 U |
| May-96 | 1.0 U | 1.0 U | 0.52 J | 1.0 U | 1.0 U | 1.0 U |
| Oct-96 | 0.31 J | 1.0 U | 0.48 J | 1.0 U | 1.0 U | 1.0 U |
| May-97 | 0.43 J | 1.0 U | 0.44 J | 1.0 U | 1.0 U | 1.0 UJ |
| Oct. 97 | 0.3 U | 0.4 U | 0.4 U | 0.4 U | -- | 0.50 U |
| May-98 | 0.5 U | 0.6 U | 2.0 U | 1.0 U | 0.70 U | 2.0 U |
| Oct-01 | 1.1 | 0.15 J | 0.19 J | 0.12 J | 0.50 U | 0.50 U |
| Oct-02 | 1.1 | 0.26 J | 0.25 J | 0.5 U | 0.50 U | 0.50 U |
| Oct-03 | 0.95 | 0.29 J | 0.17 J | 0.5 U | 0.50 U | 0.50 U |
| Oct-04 | 0.64 | 0.28 J | 0.17 J | 0.5 U | 0.50 U | 0.50 U |
| Oct-05 | 0.62 | 0.24 J | 0.78 | 0.13 J | 0.50 U | 0.50 U |
| Oct-06 | **5.1** | 0.43 J | 2.4 | 0.78 | 0.50 U | 0.50 U |
| Oct-07 | **330** | 1.6 | 6.5 | **2.7** | 0.50 U | 0.50 U |
| Dec-07 | **410** | 2.1 | 7.5 | **2.9** | 0.50 U | 0.50 U |
| Jan-08 shallow [a] | **430** | 1.9 | 6.9 | **2.6** | 1.0 U | 1.0 U |
| Jan-08 deep [a] | **460** | 1.9 | 6.9 | **2.7** | 1.0 U | 1.0 U |
| May-08 | **460** | 2.3 | 6.0 | **2.4** | 0.50 U | 0.50 U |
| Jul-08 | **410** | 1.4 | 4.8 | **1.7** | 1.0 U | 1.0 U |
| Oct-08 [b] | **390** | 1.4 | 4.5 | **1.4** | 1.0 U | 1.0 U |
| Jan-09 | **300** | 1.5 | 3.2 | **1.3** | 0.50 U | 0.50 U |
| May-09 | **320** | 1.4 | 2.6 | **1.1** | 0.50 U | 0.50 U |
| Oct-09 | **210** | 0.75 | 1.8 | 0.75 | 0.50 U | 0.50 U |
| Apr-10 | **200** | 0.66 | 2.1 | 0.61 | 0.50 U | 0.50 U |
| Oct-10 | **130** | 0.47 J | 0.85 | 0.35 J | 0.50 U | 0.50 U |
| Apr-11 | **75** | 0.31 J | 0.71 | 0.18 J | 0.50 U | 0.50 U |
| Oct-11 | **68** | 0.29 J | 0.56 | 0.18 J | 0.50 U | 0.22 J |
| Mar-12 | **52** | 0.20 J | 0.37 J | 0.09 J | 0.50 U | 0.50 |
| Apr-12 | **52** | 0.19 J | 0.29 J | 0.09 J | 0.50 U | 0.53 |
| Jul-12 | **53** | 0.22 J | 0.30 J | 0.50 U | 0.50 U | 0.60 |
| Oct-12 | **39** | 0.15 J | 0.16 J | 0.50 U | 0.50 U | 0.43 J |
| Cleanup Level | 5 | 5 | 200 | 1 | 70 | 2,400 |

NOTES:

**BOLD** results exceed the Boomsnub/Airco Site-specific cleanup level.

Only detected compounds are included in this table.

Concentrations presented are the highest of the sample and duplicate results.

[a] = Two samples were collected using PDBs in January 2008 - one near the top of the screened interval (shallow) and one near the bottom (deep).

-- = Not available

CFC-11 = Trichlorofluoromethane

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

1,1-DCE = 1,1-Dichloroethene

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.

PCE = Tetrachloroethene

TCE = Trichloroethene

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

UJ = The analyte was not detected, but the associated limit of quantitation is estimated.

µg/L = Micrograms per liter

VOC = Volatile organic compound

## Table E-2. Historical VOC Concentrations in Well AMW-17 Groundwater Samples (in µg/L)

| Date Sampled | TCE | PCE | 1,1,1-TCA | 1,1-DCE | Cis-1,2-DCE | CFC-11 |
|---|---|---|---|---|---|---|
| Apr-95 | **66.9** | 1.0 U | 5.8 | **1.6 J** | 21 | 10.6 |
| Oct-95 | **42.5** | 1.0 U | 36.1 | **5.4** | 12.7 | 19.2 J |
| May-96 | **39.6** | 1.0 U | 52.6 | **9.7** | 9.2 | 10.1 |
| Oct-96 | **20.5** | 1.0 U | 169 | **25.9** | 3.5 | 19.7 |
| May-97 | **17.3** | 1.0 U | 89.6 | **23.8** | 2.1 | 23.3 |
| Oct. 97 | **12** | 0.4 U | 67 | **9.0** | -- | 14.0 |
| May-98 | **7.0** | 0.6 U | 48 | **9.0** | 0.70 U | 9.0 |
| Sep-98 | **8.0** | 0.6 U | 52 | **9.0** | 0.70 U | 6.0 |
| May-99 | **5.0** | 0.6 UJ | 12 J | **8.0 J** | 0.70 UJ | 5.0 J |
| Oct-99 | 3.4 | 0.5 U | 3 | **1.2** | 0.50 U | 0.50 |
| Oct-01 | 2.7 | 0.5 U | 4.2 | **1.8** | 0.39 J | 0.52 |
| Oct-02 | 2.3 | 0.5 U | 2.2 | 0.74 | 0.22 J | 0.35 J |
| Oct-03 | 2.2 | 0.5 U | 1.1 | 0.45 J | 0.12 J | 0.25 J |
| Oct-04 | 1.8 | 0.5 U | 0.9 | 0.32 J | 0.50 U | 0.19 J |
| Oct-05 | 1.9 | 0.5 U | 0.85 | 0.29 J | 0.50 U | 0.50 U |
| Oct-06 | 1.5 | 0.5 U | 0.69 | 0.23 J | 0.50 U | 0.50 U |
| Oct-07 | 1.5 | 0.5 U | 1.1 | 0.50 U | 0.50 U | 0.50 U |
| Oct-08 | 1.2 | 0.09 J | 0.20 J | 0.50 U | 0.50 U | 0.50 U |
| Jan-09 | 1.1 | 0.09 J | 0.17 J | 0.50 U | 0.50 U | 0.50 U |
| May-09 | 1.3 | 0.08 J | 0.31 J | 0.13 J | 0.50 U | 0.50 U |
| Oct-09 | 1.2 | 0.07 J | 0.8 | 0.22 J | 0.50 U | 0.50 U |
| Apr-10 | 1.1 | 0.09 J | 1.0 | 0.33 J | 0.50 U | 0.50 U |
| Oct-10 | **28** | 0.21 J | 2.6 | **1.4** | 0.50 U | 0.50 U |
| Apr-11 | **29** | 0.27 J | 1.3 | 0.89 | 0.50 U | 0.50 U |
| Oct-11 | **140** | 0.68 | 2.3 | **1.0** | 0.50 U | 0.50 U |
| Mar-12 | **160** | 0.81 | 1.5 | 0.82 | 0.50 U | 0.50 U |
| Apr-12 | **160** | 0.85 | 1.3 | 0.76 | 0.50 U | 0.50 U |
| Jul-12 | **210** | 1.0 | 2.3 | **1.1** | 0.50 U | 0.50 U |
| Oct-12 | **210** | 0.90 | 2.5 | **1.2** | 0.50 U | 0.50 U |
| Cleanup Level | 5 | 5 | 200 | 1 | 70 | 2,400 |

NOTES:
**BOLD** results exceed the Boomsnub/Airco Site-specific cleanup level.
Concentrations presented are the highest of the sample and duplicate results, where applicable.
-- = Not available
CFC-11 = Trichlorofluoromethane
cis-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCE = 1,1-Dichloroethene
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.
PCE = Tetrachloroethene
TCE = Trichloroethene
U = Analyte was not detected above the specified reporting limit.
UJ - The analyte was not detected, but the associated limit of quantitation is estimated.
µg/L = Micrograms per liter
VOC = Volatile organic compound

## Table E-3. VOC Concentrations in Well AMW-64 Groundwater Samples (in µg/L)

| Date Sampled | TCE | PCE | 1,1,1-TCA | 1,1-DCE | Cis-1,2-DCE | CFC-11 |
|---|---|---|---|---|---|---|
| Mar-12 | **190** | 0.27 J | 3.5 | **2.7** | 0.11 J | 0.50 U |
| Apr-12 | **160** | 0.31 J | 1.7 | **2.5** | 0.43 J | 0.50 U |
| Jul-12 | **170** | 0.40 J | 2.4 | **2.7** | 0.68 | 0.50 U |
| Oct-12 | **110** | 0.27 J | 1.2 | **1.5** | 1 | 0.50 U |
| Cleanup Level | 5 | 5 | 200 | 1 | 70 | 2,400 |

NOTES:
**BOLD** results exceed the Boomsnub/Airco Site-specific cleanup level.
Concentrations presented are the highest of the sample and duplicate results, where applicable.
CFC-11 = Trichlorofluoromethane
cis-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCE = 1,1-Dichloroethene
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.
PCE = Tetrachloroethene
TCE = Trichloroethene
U = Analyte was not detected above the specified reporting limit.
µg/L = Micrograms per liter
VOC = Volatile organic compound

# Appendix F

# Data Validation Report

**DATA VALIDATION REPORT**
**SAMPLE DELIVERY GROUP NO. K1109848**

**PROJECT NO:** 14495.05.2013.0011
**PROJECT NAME:** Boomsnub/Airco Superfund Site
**LABORATORY:** Columbia Analytical Services, Inc./ALS Group, Kelso, Washington
**REVIEWER:** Brenda O. Nuding, Project Chemist
**DATE:** 07 January 2013

| Date(s) Collected | 22, 23, and 24 October 2012 | | | |
|---|---|---|---|---|
| Sample Delivery Group No. | K1210798 | | | |
| ANALYSIS (METHOD) | Water Sample(s) | Equipment Blank(s) | Trip Blank(s) | Field Duplicate(s) |
| Volatile Organic Compounds (SW8260C) | 11 | 3 | 2 | 1 |
| Total Chromium (E200.7) | 11 | 3 | 0 | 1 |

The analytical data were reviewed with respect to quality assurance and quality control (QA/QC) parameters as specified in the *Quality Assurance and Sampling Plan for the Groundwater Treatment System Operation and Maintenance at Boomsub/Airco Superfund Site, Hazel Dell, Washington* (EA, 2004). In addition, the following guidance documents were used while assessing the validity of these data: the U.S. Environmental Protection Agency (EPA) Contract Laboratory Program, *National Functional Guidelines for Inorganic Superfund Data Review*, January 2010, and *National Functional Guidelines for Superfund Organic Methods Data Review*, June 2008; and the EPA Office of Solid Waste, *SW-846 Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*, April 1998 and all updates. As applicable to referenced methodology, QA/QC parameters reviewed include:

- Chain-of-custody/ Sample receipt
- Holding times
- Instrument performance check
- Initial and continuing calibrations
- Method and calibration blanks
- Interference check samples
- Laboratory control samples
- Surrogate recovery
- Matrix spike and matrix spike duplicate samples and laboratory duplicates
- Field quality control samples
- Serial dilution
- Internal standards
- Target compound identification
- Compound quantitation
- Data qualifiers

| SAMPLE DELIVERY GROUP | K1210798 |
|---|---|

**Chain-of-custody/Sample Receipt:**
The sample cooler(s) and the samples contained within were received intact at the laboratory with the proper chemical preservative at temperatures below 6 degrees Celsius. No qualification of sample data is necessary on the basis of sample receipt or chain of custody.

**Holding Times:**
The project samples were prepared and analyzed within the holding times specified by the referenced methods of analysis.

**Instrument Performance Check:**
Gas chromatograph (GC)/mass spectrometer (MS) instrument performance checks are performed to ensure mass resolution, identification, and sensitivity. The instrument performance check criteria associated with samples from this sample delivery group (SDG) were within the method-established control limits.

**Initial and Continuing Calibrations:**
Initial and continuing calibrations were performed at the required frequencies. The target analytes were within laboratory-established control limits.

**Method and Calibration Blanks:**
Method and calibration blanks were prepared and analyzed as recommended by the referenced method. The analytical results for the method blank and calibration blank samples were reported below the method detection limits.

**Interference Check Samples:**
Inductively coupled plasma (ICP) interference check samples (ICSA/ICSAB) verify the interelement and background correction factors. ICSA/ICSAB standards were analyzed at the beginning of each analytical sequence. The ICSAB standard associated with samples from this SDG were within control limits.

**Laboratory Control Samples:**
Laboratory control samples (LCS) were prepared and analyzed as recommended by the referenced EPA method. The percent recoveries (%R) for LCS were within the laboratory and project-established control limits for the analytical batches containing the samples from this SDG.

**Surrogate Recovery:**
Surrogates were added to environmental and QC samples and standards for analysis of organic compounds as required by the referenced methodology. The surrogate recoveries were within the laboratory-specified control limits.

**Matrix Spikes / Matrix Spike Duplicates / Laboratory Duplicates:**
Matrix spikes and matrix spike duplicates (MS/MSD) were reviewed for each analysis. The %R and relative percent difference (RPD) for these QC samples were within laboratory-specified QC limits.

| | |
|---|---|
| SAMPLE DELIVERY GROUP | K1210798 |

**Field Quality Control Samples:**

Field Duplicate(s): One field duplicate was collected with this SDG. Project sample 1243004 is a field duplicate of 1243003. The analytical results reported for the duplicate were compared those for the primary sample. The RPD for field duplicate results greater than the associated reporting limits were less than 25 percent.

Trip Blank(s): Two trip blanks were collected with this SDG. The analytical results for the trip blank samples were reported below the method detection limits. No qualification of sample data is necessary based upon the results of these trip blanks.

Rinsate Blank(s): Three rinsate blanks were collected with this SDG. The analytical results for the rinsate blank samples (1243005, 1243010, and 01243016) were reported below the method detection limits, with the exception of chromium and methylene chloride. Total chromium was reported in rinsate blanks as follows: 1243005 (3.4 J micrograms per liter [µg/L]), 1243010 (2.5 J µg/L), and 1243016 (1.5 J µg/L). Dichloromethane (methylene chloride) was reported in one rinsate blank as follows: 1243010 (0.12 J µg/L). These compounds were not detected in the associated samples or were detected at concentrations more than five times that of the associated equipment rinsate blank, with the following exceptions. The results for total chromium for samples 1243002, 1243003, and 1243008 were flagged with the UJ qualifier. No other data have been qualified on the basis of these field blank results.

**Serial Dilution:**
The ICP serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. Serial dilution was performed at a minimum rate of one per 20 samples per matrix. The %D for the serial dilution results were within control limits for the analytical batches containing the samples from this SDG.

**Internal Standards:**
Internal standards were added to environmental and QC samples and standards to monitor sensitivity and response during every analytical run, as appropriate for the analytical method. The internal standard area counts and retention times were within the method-specified control limits.

**Target Compound Identification:**
Organic analysis performed by GC/MS methods requires reporting mass spectra comparison to verify compound identification. For project samples, mass spectra criteria were within method-specified criteria for the detectable target analytes.

**Compound Quantitation:**
The reported quantitation results and reported detection limits were reviewed and found to be accurate and to meet project requirements.

**Data Qualifiers:**
The appropriate data flags were used and defined in the analytical report. During data validation, an additional qualifier has been applied to data. This is defined below:

| | |
|---|---|
| SAMPLE DELIVERY GROUP | K1210798 |

"UJ" indicates that the analyte was not detected, but the associated limit of quantitation is estimated.

**Summary:**

The analytical data contained in this report have been reviewed for completeness, accuracy, and precision. The data as qualified meet the quality objectives for the intended use.

MW-35



## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/22/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243002 **Lab Code:** K1210798-002

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 16.5 | | U |

Comments:

Reviewed 1/7/13

MW-27D



## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/22/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243003 **Lab Code:** K1210798-003

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 12.9 | | W |

Comments:

Renewed 1/7/13 BE

MW-27D
Field Duplicate

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/22/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243004 **Lab Code:** K1210798-004

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 12.2 | | |

Comments:

Reviewed 1/7/13

Equipment Rinsate 1

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/22/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243005 **Lab Code:** K1210798-005

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 3.4 | J | |

Comments:

Reviewed 1/7/2013

CPM-2

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/22/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243006 **Lab Code:** K1210798-006

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 2.0 | J | |

Comments:

Reviewed 1/7/13
RL

CPU-10

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/23/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243007 **Lab Code:** K1210798-007

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 23.2 | | |

Comments:

Reviewed 1/7/13

CPU-10

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/23/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243008 **Lab Code:** K1210798-008DISS

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 1.0 | | UJ |

Comments:

Dissolved

Reviewed 1/7/13 BZ

CPU-14

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/23/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243009 **Lab Code:** K1210798-009

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 37.1 | | |

Comments:

Reviewed 1/7/13

Equipment Rinsate 2

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/23/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243010 **Lab Code:** K1210798-010

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 2.5 | J | |

Comments:

Reviewed 1/7/13

MW-1A

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/24/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243014 **Lab Code:** K1210798-014

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 19.3 | | |

Comments:

Reviewed 1/7/13 PB

MW-3A

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/24/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243015 **Lab Code:** K1210798-015

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 75.4 | | |

Comments:

Reviewed 1/7/13

Equipment Rinsate 3

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/24/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243016 **Lab Code:** K1210798-016

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 1.5 | J | |

Comments:

Received 1/7/13

MW-2A

## Metals

- I -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/24/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243017 **Lab Code:** K1210798-017

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 190 | | |

Comments:

Reviewed 1/3/13

MW-4A

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/24/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243018 **Lab Code:** K1210798-018

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 362 | | |

Comments:

Reviewed 1/7/13
BZ

MW-4B

## Metals

- 1 -

## INORGANIC ANALYSIS DATA PACKAGE

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Tec | **Service Request:** | K1210798 |
| **Project No.:** | 14495.05 2012 0010 | **Date Collected:** | 10/24/12 |
| **Project Name:** | Boomsnub | **Date Received:** | 10/25/12 |
| **Matrix:** | WATER | **Units:** | ug/L |
| | | **Basis:** | NA |

**Sample Name:** 1243019 **Lab Code:** K1210798-019

| Analyte | Analysis Method | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Result | C | Q |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 200.7 | 5.0 | 0.6 | 1.0 | 11/01/12 | 11/05/12 | 407 | | |

Comments:

Reviewed 1/7/13

RL

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

TB06

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/22/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243001 | **Units:** | ug/L |
| **Lab Code:** | K1210798-001 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 113 | 73-122 | 10/29/12 | Acceptable |
| Toluene-d8 | 123 | 65-144 | 10/29/12 | Acceptable |
| 4-Bromofluorobenzene | 98 | 68-117 | 10/29/12 | Acceptable |

Reviewed 1/7/13 RB

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

MW-35

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/22/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243002 | **Units:** | ug/L |
| **Lab Code:** | K1210798-002 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1-Dichloroethene | **0.16** | J | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,1-Trichloroethane (TCA) | **0.090** | J | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichloroethene (TCE) | **5.4** | | 0.50 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Tetrachloroethene (PCE) | **0.44** | J | 0.50 | 0.099 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 108 | 73-122 | 10/29/12 | Acceptable |
| Toluene-d8 | 115 | 65-144 | 10/29/12 | Acceptable |
| 4-Bromofluorobenzene | 101 | 68-117 | 10/29/12 | Acceptable |

Reviewed 1/7/13 BE

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

MW-27D

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/22/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243003 | **Units:** | ug/L |
| **Lab Code:** | K1210798-003 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichloroethene (TCE) | **0.84** | | 0.50 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 111 | 73-122 | 10/29/12 | Acceptable |
| Toluene-d8 | 115 | 65-144 | 10/29/12 | Acceptable |
| 4-Bromofluorobenzene | 102 | 68-117 | 10/29/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

MW-27D Field Duplicate

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/22/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243004 | **Units:** | ug/L |
| **Lab Code:** | K1210798-004 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dichloroethane (EDC) | **0.090** | J | 0.50 | 0.080 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Trichloroethene (TCE) | **0.89** | | 0.50 | 0.10 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/29/12 | 10/29/12 | KWG1212863 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 117 | 73-122 | 10/29/12 | Acceptable |
| Toluene-d8 | 119 | 65-144 | 10/29/12 | Acceptable |
| 4-Bromofluorobenzene | 95 | 68-117 | 10/29/12 | Acceptable |

Reviewed 1/7/13 BR

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
Now part of the ALS Group
Analytical Results

Equipment Rinsate 1

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/22/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243005 | **Units:** | ug/L |
| **Lab Code:** | K1210798-005 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 118 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 114 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 103 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

CPU-2

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/22/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243006 | **Units:** | ug/L |
| **Lab Code:** | K1210798-006 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 113 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 122 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 99 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

**Client:** EA Engineering, Science, and Technology
**Project:** Boomsnub/14495.05 2012 0010
**Sample Matrix:** Water

**Service Request:** K1210798
**Date Collected:** 10/23/2012
**Date Received:** 10/25/2012

## Volatile Organic Compounds

**Sample Name:** 1243007
**Lab Code:** K1210798-007

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260C

**Units:** ug/L
**Basis:** NA
**Level:** Low

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 115 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 121 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 101 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

BR

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
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Analytical Results

CPH-14

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/23/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243009 | **Units:** | ug/L |
| **Lab Code:** | K1210798-009 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | **0.37** | J | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | **0.11** | J | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | **0.14** | J | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | **5.2** | | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 114 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 116 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 102 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

Equipment Rinsate 2

**Client:** EA Engineering, Science, and Technology
**Project:** Boomsnub/14495.05 2012 0010
**Sample Matrix:** Water

**Service Request:** K1210798
**Date Collected:** 10/23/2012
**Date Received:** 10/25/2012

## Volatile Organic Compounds

**Sample Name:** 1243010
**Lab Code:** K1210798-010

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260C

**Units:** ug/L
**Basis:** NA
**Level:** Low

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | 0.12 | J | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 117 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 116 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 100 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13
BZ

**Comments:**

AMW-64

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/23/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243011 | **Units:** | ug/L |
| **Lab Code:** | K1210798-011 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | **1.5** | | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | **0.16** | J | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | **1.0** | | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | **1.2** | | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | **110** | D | 1.3 | 0.25 | 2.5 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | **0.27** | J | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 116 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 116 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 101 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
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Analytical Results

AMW-18

**Client:** EA Engineering, Science, and Technology
**Project:** Boomsnub/14495.05 2012 0010
**Sample Matrix:** Water

**Service Request:** K1210798
**Date Collected:** 10/23/2012
**Date Received:** 10/25/2012

## Volatile Organic Compounds

**Sample Name:** 1243012
**Lab Code:** K1210798-012

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260C

**Units:** ug/L
**Basis:** NA

**Level:** Low

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | **0.43** | J | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | **0.16** | J | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | **39** | | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | **0.15** | J | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 110 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 114 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 97 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

CPU-12

**Client:** EA Engineering, Science, and Technology
**Project:** Boomsnub/14495.05 2012 0010
**Sample Matrix:** Water

**Service Request:** K1210798
**Date Collected:** 10/23/2012
**Date Received:** 10/25/2012

## Volatile Organic Compounds

**Sample Name:** 1243013
**Lab Code:** K1210798-013

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260C

**Units:** ug/L
**Basis:** NA

**Level:** Low

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichlorofluoromethane | **0.50** | | 0.50 | 0.12 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichloroethene (TCE) | **4.9** | | 0.50 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | * |

* See Case Narrative

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 86 | 73-122 | 11/02/12 | Acceptable |
| Toluene-d8 | 90 | 65-144 | 11/02/12 | Acceptable |
| 4-Bromofluorobenzene | 80 | 68-117 | 11/02/12 | Acceptable |

Reviewed RR 1/7/13

**Comments:**

MW-1A

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/24/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243014 | **Units:** | ug/L |
| **Lab Code:** | K1210798-014 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichlorofluoromethane | **0.53** | | 0.50 | 0.12 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichloroethene (TCE) | **6.1** | | 0.50 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Tetrachloroethene (PCE) | **0.83** | | 0.50 | 0.099 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | * |

* See Case Narrative

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 85 | 73-122 | 11/02/12 | Acceptable |
| Toluene-d8 | 92 | 65-144 | 11/02/12 | Acceptable |
| 4-Bromofluorobenzene | 81 | 68-117 | 11/02/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

Equipment Rinsate 3

**Client:** EA Engineering, Science, and Technology
**Project:** Boomsnub/14495.05 2012 0010
**Sample Matrix:** Water

**Service Request:** K1210798
**Date Collected:** 10/24/2012
**Date Received:** 10/25/2012

## Volatile Organic Compounds

**Sample Name:** 1243016
**Lab Code:** K1210798-016

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260C

**Units:** ug/L
**Basis:** NA

**Level:** Low

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | * |

* See Case Narrative

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 84 | 73-122 | 11/02/12 | Acceptable |
| Toluene-d8 | 90 | 65-144 | 11/02/12 | Acceptable |
| 4-Bromofluorobenzene | 79 | 68-117 | 11/02/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

MW-2A

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/24/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243017 | **Units:** | ug/L |
| **Lab Code:** | K1210798-017 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichlorofluoromethane | **0.20** | J | 0.50 | 0.12 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Trichloroethene (TCE) | **1.7** | | 0.50 | 0.10 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Tetrachloroethene (PCE) | **0.78** | | 0.50 | 0.099 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 10/30/12 | 10/30/12 | KWG1212913 | |

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 113 | 73-122 | 10/30/12 | Acceptable |
| Toluene-d8 | 113 | 65-144 | 10/30/12 | Acceptable |
| 4-Bromofluorobenzene | 101 | 68-117 | 10/30/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

MW-4B

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

**Client:** EA Engineering, Science, and Technology
**Project:** Boomsnub/14495.05 2012 0010
**Sample Matrix:** Water

**Service Request:** K1210798
**Date Collected:** 10/24/2012
**Date Received:** 10/25/2012

## Volatile Organic Compounds

**Sample Name:** 1243019
**Lab Code:** K1210798-019

**Extraction Method:** EPA 5030B
**Analysis Method:** 8260C

**Units:** ug/L
**Basis:** NA

**Level:** Low

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichloroethene (TCE) | **4.2** | | 0.50 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Tetrachloroethene (PCE) | **0.64** | | 0.50 | 0.099 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | * |

* See Case Narrative

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 86 | 73-122 | 11/02/12 | Acceptable |
| Toluene-d8 | 92 | 65-144 | 11/02/12 | Acceptable |
| 4-Bromofluorobenzene | 81 | 68-117 | 11/02/12 | Acceptable |

Reviewed 1/7/13

**Comments:**

**COLUMBIA ANALYTICAL SERVICES, INC.**
**Now part of the ALS Group**
Analytical Results

TB07

| | | | |
|---|---|---|---|
| **Client:** | EA Engineering, Science, and Technology | **Service Request:** | K1210798 |
| **Project:** | Boomsnub/14495.05 2012 0010 | **Date Collected:** | 10/24/2012 |
| **Sample Matrix:** | Water | **Date Received:** | 10/25/2012 |

## Volatile Organic Compounds

| | | | |
|---|---|---|---|
| **Sample Name:** | 1243020 | **Units:** | ug/L |
| **Lab Code:** | K1210798-020 | **Basis:** | NA |
| **Extraction Method:** | EPA 5030B | **Level:** | Low |
| **Analysis Method:** | 8260C | | |

| Analyte Name | Result | Q | MRL | MDL | Dilution Factor | Date Extracted | Date Analyzed | Extraction Lot | Note |
|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichlorofluoromethane | ND | U | 0.50 | 0.12 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1-Dichloroethene | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Methylene Chloride | ND | U | 2.0 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| trans-1,2-Dichloroethene | ND | U | 0.50 | 0.072 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| cis-1,2-Dichloroethene | ND | U | 0.50 | 0.067 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,1-Trichloroethane (TCA) | ND | U | 0.50 | 0.075 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Carbon Tetrachloride | ND | U | 0.50 | 0.096 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dichloroethane (EDC) | ND | U | 0.50 | 0.080 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Trichloroethene (TCE) | ND | U | 0.50 | 0.10 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Bromodichloromethane | ND | U | 0.50 | 0.091 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Tetrachloroethene (PCE) | ND | U | 0.50 | 0.099 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Dibromochloromethane | ND | U | 0.50 | 0.14 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.50 | 0.16 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| 1,2-Dibromo-3-chloropropane | ND | U | 2.0 | 0.20 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | |
| Hexachlorobutadiene | ND | U | 2.0 | 0.11 | 1 | 11/02/12 | 11/02/12 | KWG1213104 | * |

* See Case Narrative

| Surrogate Name | %Rec | Control Limits | Date Analyzed | Note |
|---|---|---|---|---|
| Dibromofluoromethane | 84 | 73-122 | 11/02/12 | Acceptable |
| Toluene-d8 | 89 | 65-144 | 11/02/12 | Acceptable |
| 4-Bromofluorobenzene | 80 | 68-117 | 11/02/12 | Acceptable |

Reviewed 11/7/13

**Comments:**