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VIA COURIER

October 23, 2015

David Brownlee
Response and Remediation Program
Georgia Environmental Protection Division
2 Martin Luther King, Jr. Drive
Suite 1462 – East Tower
Atlanta, GA 30334

Re: Voluntary Remediation Program Progress Report
Roper Pump Company
3475 Old Maysville Road
Commerce, Georgia 30529

Dear Mr. Brownlee:

Enclosed is the first Semi-Annual Report prepared by EPS for the Roper Pump Company ("Roper") in Commerce, Georgia. In addition, as we discussed previously, Roper agreed to respond to the comments from the Georgia Environmental Protection Division ("EPD") on the comments to the Roper Voluntary Remediation Program ("VRP") application provided in a letter to Roper by EPD on April 13, 2015, as part of this submittal. Therefore, EPD's comments from the letter dated April 13, 2015 are set forth below in bold type followed by Roper's response.

1) **According to EPD's August 22, 2014, letter, it was noted that regulated substances were detected in the sediment from the surface water outfall area to the east of the site. The 2014 VRP Application did not include any assessment(s) of potential human health and ecological receptors associated with the surface water and sediment exposure pathway related to this surface water outfall. Once it has been established that the sediment and surface water are potentially complete exposure pathways for a release from the site, EPD requests that the VRP Application and Plan include, at a minimum, plans to conduct a Screening Level Ecological Risk Assessment (SLERA) in accordance with the U.S. EPA Ecological Risk Assessment Guidance for Superfund (ERAGS) and U.S. EPA Region 4 Ecological RAGS Bulletins. The ERA should also be consistent with U.S. EPA's eight step ERA process and include the following:**

    a) **A comparison of onsite and offsite levels of COIs in sediment to the US EPA Region 4 Ecological Sediment Screening Values.**

b) A description of the aquatic habitat(s), potentially impacted organisms, and their exposure pathways associated with the onsite drainage ditch and Dillon Branch Creek.

Roper's Response to Comment #1

The reference to "Dillon Branch Creek" in comment #1 appears to be an error, and presumably EPD intended to reference Gravelly Creek. The local area surface water features away from the site are comprised of the following: an unnamed tributary begins west of the Roper facility (beyond the Outfall) and traverses approximately 2.4 miles to the west merging into Gravelly Creek, which then flows south approximately 1.2 miles merging into the N. Oconee River (just upstream of Woods Bridge).

As requested, Roper will conduct an evaluation of human health and ecological exposure receptors along the unnamed tributary leaving the Outfall area. Based on this review, Roper will determine whether sediment and surface water are potentially complete exposure pathways, and if so, a SLERA work plan will be prepared to guide evaluation of the pathway.

2) According to EPD's August 22, 2014, letter, the VRP Application and Plan would include a comprehensive evaluation of the vapor intrusion (VI) pathway, taking into account the noted recommendations from OSHA in the event that the known contaminants are still in use at the facility. Please specify if the chemicals identified as part of the vapor intrusion/inhalation exposure pathway evaluation (PCE, TCE, etc.) are still in use at the facility. In the event that these identified chemicals are not currently in use, please note that non-residential screening values should be applied rather than OSHA PELs. In addition, should non-residential screening values be applied please note that the VI sub-slab detections of PCE and TCE already exceed the EPA VISL calculator sub-slab non-residential screening levels at a risk level of $1x10^{-5}$ with a hazard quotient of 1.

Roper's Response to Comment #2

The sub-slab vapor assessment presented in the VRP Application (the basis for this comment) was conducted before installation of the SVE remediation system at the Site. Roper will evaluate the current chemical inventory at the facility to establish which constituents fall under OSHA versus EPA risk-based remedial goals. Roper will also re-sample the sub-slab vapor probes previously installed to gain a current depiction of the conditions under the influence of the SVE system.

3) Additional groundwater investigation activities will need to be conducted in order to order to meet the groundwater delineation requirements for the site in accordance with Section 12-8-108 of the VRP Act. In addition, the site will need to utilize the additional delineation and characterization data to determine a "point of exposure" (POE) and corresponding "point of demonstration" POD for the groundwater exposure pathway. The additional groundwater delineation and characterization activities should include, but not be limited to, the following:

a) **Section 102-8-108(8) of the Act states that, "compliance with site-specific cleanup standards that require that source material be removed may be satisfied when such material is removed, decontaminated, or otherwise immobilized in the subsurface, to the extent practicable." The 2014 VRP Application indicated that the concentrations of PCE in groundwater in the area of MW-7 and SB-9, and former B-10 boring location, are representative of potential source material, i.e. dense non-aqueous phase liquid (DNAPL). Therefore, EPD requires that data be provided to demonstrate that sufficient investigations have been completed to determine the potential extent of the subsurface PCE source material, and propose a corrective action to remediate the identified source material to the extent practicable.**

b) **Additional groundwater plume characterization is required at the following locations in order to complete both the CSM and the horizontal groundwater delineation requirements in accordance with Section 12-8-108 of the VRP Act:**

   i. **North of MW-10, TW-8, TW-1**

   ii. **East of MW-8, MW-3, and MW-11,**

   iii. **South of B-10, MW-11 and TW-4,**

   iv. **West of TW-1.**

c) **Due to the groundwater impacts at varying depths and the potential for DNAPL to exist at the site, additional groundwater plume characterization is required at the following locations in order to complete both the CSM and the vertical groundwater delineation requirements in accordance with Section 12-8-108 of the VRP Act: vertical characterization proximal to and downgradient of the area classified as containing potential source material, specifically around MW-7 and boring B-10. Particular care should be taken in identifying any preferential migration pathways that may exist within the overlying soil formations and associated bedrock material(s).**

d) **Metals at levels above acceptable standards were identified and removed from soils/sediments as part of previous corrective measures at the site, thereby qualifying these constituents as COIs at the site. Therefore, please incorporate a baseline analysis of arsenic, lead, chromium, hexavalent chromium, mercury, and cadmium into future groundwater assessments.**

Roper's Response to Comment #3)a.

In response to EPD's comment, Roper installed two additional deep monitoring wells: MW-12D was installed in the vicinity of MW-7/SB-9 and MW-13D was installed in the vicinity of B-10. Sampling results were well below the 1% solubility limit (33 µg/L and 140 µg/L, compared to a PCE 1% solubility level of 2,060 µg/L). Therefore, this comment has been addressed.

Roper's Response to Comment #3)b.

Following is Roper's response to the specific requests on delineation:

i. North of MW-10, TW-8, TW-1: Existing well MW-10 adequately serves to delineate the northern boundary of the plume given this wells tests below the Type 1 RRS. There is no need to install another well north, which is side-gradient to the groundwater flow direction.

ii. East of MW-8, MW-3, and MW-11: Roper agrees that additional delineation is warranted east of the stated well grouping.

iii. South of B-10, MW-11 and TW-4: A new well (MW-14) was installed during the current reporting period south of TW04, which delineates the VOC plume in the southerly direction.

iv. West of TW-1: Location TW-1 was characterized as non-detect for VOCs. There is no need to install an additional well to the west, up-gradient, of TW-1.

Roper's Response to Comment #3)c.

Per EPD's request, Roper installed additional deep monitoring wells during the current reporting period proximal to and down-gradient of B-10/MW-7 (new well MW-13D down-gradient of B-10, and new well MW-12D offset from MW-7).

Roper's Response to Comment #3)d.

Per EPD's request, Roper conducted the testing for metals during the current reporting period.

4) Please update the two cross sections to include the following:

- **a) Soil classifications and descriptions within the "residuum soil,";**
- **b) Lateral and vertical extent of previous excavations;**
- **c) Soil vapor extraction (SVE) system components;**
- **d) Drainage/utility conduits and/or preferential pathways; and**
- **e) Soil borings/sample locations where applicable.**

Roper's Response to Comment #4:

Minor updates were made to the two cross sections (as provided in Appendix C of the Progress Report) to incorporate information gained from the new monitoring wells installed during the reporting period. A more comprehensive update to cross sections, incorporating the requested information, will be made as more information is gathered from the Site and reported in the next Semi-Annual Report.

5) Please provide soil sampling data to address the delineation requirements for the following areas: north of B-1, south and east of SB-4 through SB-7, south/southwest of SB-104/-108/-111/-113/-118, west of SB-121/-122, and west/north of the initial loading dock excavation area (BE-1 through BE-10) and SVE installation as this area was only excavated and investigated to 1-ft. below the ground surface. Please note

that the depth of impacts to the soil range from 1-ft down to groundwater, which is approximately 18-24 bgs in the area of impact.

Roper's Response to Comment #5:

EPS has developed a 3-D visualization of the PCE soil condition which demonstrates that adequate delineation has occurred. We will arrange a brief meeting to present the 3-D analysis to EPD.

6) Please provide a figure illustrating property owner and property use information for all abutting properties.

Roper's Response to Comment #6:

Following is information regarding ownership and use of abutting properties (and see attached figure):

To the West

- 034 032A
  Owner: Watson Clyde & Lena
  Use: Residential

To the North

- 034 016
  Owner: Baker & Taylor Inc.
  Use: Baker & Taylor Inc. service center. Baker & Taylor is book/video/music distributor.
  (See http://www.baker-taylor.com/home_aboutus_details.cfm)-Commerce GA listed as service center location

- 034 016B
  Owner: Baker & Taylor Inc.
  Use: Same as 034 016 above

To the Northeast

- 034 016
  Owner: City of Commerce
  Use: Water tower on property

To the East

- 021 054
  Owner: PBR Inc.
  Use: SKAPS Industries- Manufactures GeoNet and GeoComposite products. GeoNet is high density polyethylene for purpose of environmental drainage control. GeoComposite is GeoNet bonded with non-woven geotextile for purpose filtering leachate solutions.
  (See http://www.skaps.com/index.php/products.html) – Explicitly states

that their location in commerce is used to manufacture GeoNet and GeoComposite products.

- 021 002B1
  Owner: PBR Inc.
  Use: Same as 021 002B1 above

7) Section 2.2, Regulated Constituents of Interest (COIs) and Delineation Criteria, indicates that the COIs for soil and groundwater are determined based on more than one result exceeding the delineation criteria and having greater than 1% of the results exceeding the criteria. Please note that all constituents that have exceeded the established RRS and delineation criteria should be identified as a COI. EPD understands that certain COIs will drive the remedial strategies, but please note that the final VRP CSR should certify compliance for any identified COI that has exceeded an established standard throughout the span of the investigation and cleanup activities, including any known impacts to surface water and/or sediment.

Roper's Response to Comment #7:

Per EPD's request, Roper has developed updated Risk Reduction Standards (RRS) and corresponding COI and the updated technical memorandum was submitted to EPD on September 22, 2015.

8) Section 3.4.2, Nature and Extent of Environmental Conditions, indicates that since the chromium and lead impacted sediments from the storm water outfall area were removed to below residential RRS, "metals are no longer COI for the Site." EPD does not concur with the statement that these two metals are not part of the site related COI list. In addition, a comprehensive investigation of metals in soils and groundwater on the site property, and the adjacent metal plating operation, has not been completed as requested in EPD's August 22, 2014, letter.

Roper's Response to Comment #8:

As agreed during our conference call on August 6, 2015, and supported by EPD correspondence of August 26, 2015, EPD has retracted the request for an assessment of the adjacent plating facility.

9) Section 3.4.2.8 of the VRP Application does not indicate that any additional investigation activities were conducted to address the sub-slab vapor sample VI-4 that detected benzene at a concentration of 92,000 µg/m3 (along with minor detections at nearby locations VI-3 and VI-5).

At a minimum, an explanation should be provided as to the source of this abnormality in the sub-slab vapor data. In addition, the VRP VI evaluation did not to include a description of the sampling procedures, including the status of the SVE system during sample collection.

Roper's Response to Comment #9:

Although the source of benzene in the sub-slab vapor is unknown, its extent is quite limited and furthermore the VI-4 location is in proximity (approximately 25 ft) of the SVE system. There are no soil or groundwater benzene detections anywhere in the vicinity of the sub-slab benzene detections in the noted area. Therefore, we conclude that any benzene release in this area was minor and does not pose a significant contaminant threat to soil or groundwater.

10) Please provide a storm sewer assessment and a figure illustrating all onsite above ground and in-ground storm sewer/drainage conveyances and/or utility corridors.

Roper's Response to Comment #10:

A figure illustrating the known above- and in-ground storm water conveyances and/or utility corridors will be provided in the updated Conceptual Site Model, in the next Semi-Annual Report.

We hope that the above adequately addresses your comments. Please do not hesitate to contact me if you have any questions.

Sincerely,

Justin Vickery, PG
Associate

Attachments: EPD Comment 6 Abutting Properties Figure
VRP Progress Report (1 paper copy, 2 electronic copies)

cc: Joe Renzetti, President, Roper Pump Company
Adam G. Sowatzka, King & Spalding

EPD Comment 6
Abutting Property Figure

Prepared for:

ROPER PUMP COMPANY
3475 Old Maysville Road
Commerce, GA 30529

VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT
Roper Pump Company
Commerce, Georgia

Prepared by:

1050 Crown Pointe Parkway, Suite 550
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Tel: 404-315-9113

October 2015

VOLUNTARY REMEDIATION PROGRAM
PROGRESS REPORT

Roper Pump Company
Commerce, Georgia

Prepared For:

ROPER PUMP COMPANY
3475 Old Maysville Road
Commerce, GA 30529

Prepared By:

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Justin Vickery, P.G.
Associate

October 2015

EPS

VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT
Roper Pump Company
Commerce, Georgia

October 2015

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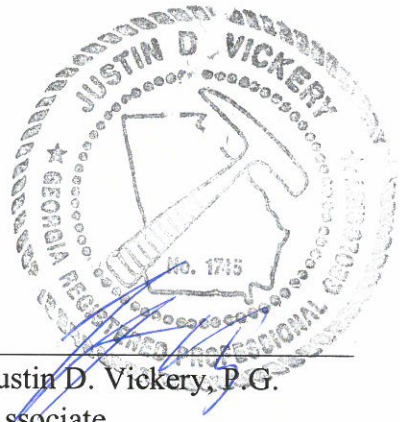
VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT
Roper Pump Company
Commerce, Georgia

GROUNDWATER SCIENTIST STATEMENT

I certify that I am a qualified ground water scientist who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in ground water hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this Progress Report was prepared by me or by a subordinate working under my direction.



Certified by: _____ Date: 10-23-15

Justin D. Vickery, P.G.
Associate
No. 1745

1. INTRODUCTION

1.1 Purpose of the Report

This is the first Semi-Annual Voluntary Remediation Program (VRP) Progress Report, which is being submitted on behalf of Roper Pump Company (Roper) for Roper's manufacturing facility located at 3475 Old Maysville Road in Commerce, Georgia, more specifically Jackson County Tax Parcel 034-032 (Site). The Site location is shown on Figure 1 (all figures are included in the Figures attachment). The purpose of this Progress Report is to describe the activities conducted during the current reporting period (April 2015 through September 2015) and to discuss planned activities for the next reporting period.

1.2 Background

In May 2009 during construction activities associated with a facility expansion, soils and groundwater adjacent to an abandoned storm sewer line were found to have elevated concentrations of volatile organic compounds (VOCs), primarily tetrachloroethene (PCE). Figure 2 is a Site Plan and shows the location of the abandoned storm sewer line. A Release Notification was submitted to the Georgia Environmental Protection Division (EPD) pursuant to the Hazardous Site Response Act (HSRA) on July 13, 2009. On November 23, 2009, EPD informed Roper that the Site was listed on the Georgia Hazardous Site Inventory (HSI), HSI #10901, designating it as a Class II cleanup priority site. On October 4, 2013, the EPD requested that a Compliance Status Report (CSR) or a Corrective Action Plan (CAP) be submitted by April 4, 2014. In a meeting on April 3, 2014, EPD agreed to delay the submittal of a CAP and that Roper should submit a data report by May 8, 2014. In May 2014, the Report of Site Characterization and Remedial Action (EPS, 2014a) was submitted to the EPD. In a letter dated August 22, 2014, the EPD requested that Roper submit either a VRP Application or a CSR by December 31, 2014. On December 18, 2014, Roper submitted a VRP Application (EPS, 2014b), and the EPD approved Roper's entry into the VRP in a letter dated April 13, 2015, which established a reporting schedule of January 15 and July 15 of each year. The EPD issued a revised April 13, 2015 letter changing the reporting schedule to April 15 and October 15 of each year. Also on April 13, 2015, the EPD issued a comment letter, many of which are addressed herein, requesting additional Site data. Finally, on August 26, 2015, the EPD issued a letter amending the April 13, 2015 VRP participant acceptance letter, by removing the requirement for an environmental assessment targeting the industrial operations on the adjacent property.

2. VRP PROJECT MANAGEMENT

2.1 Professional Geologist Oversight

This Progress Report includes a certification by Justin Vickery, P.G., the Professional Geologist specified in the VRP Application. Appendix A contains a monthly summary of hours invoiced by the P. G.

2.2 Milestone Schedule

An updated milestone schedule is included in Appendix B.

2.3 Conceptual Site Model

The VRP Application (EPS, 2014b) included a Preliminary Conceptual Site Model (CSM). Since that time, additional site data has been collected. Updated CSM information is included in Appendix C.

3. RECENTLY COMPLETED ACTIVITIES

3.1 Overview

Section 3 discusses activities conducted between April 15, 2015 and September 31, 2015, including:

- Update the Risk Reduction Standards (RRSs);
- Screening off-property soil/sediment data against the EPA Region 4 Ecological Screening Values (ESVs);
- On-site groundwater assessment; and
- Ongoing remediation utilizing the vadose zone soil vapor extraction system.

3.2 Risk Reduction Standards

An update to the development of RRSs was submitted to the EPD in a technical memorandum dated September 24, 2015 (EPS 2015). The memorandum included the selection of constituents-of-interest (COI), a review of the receptors and exposure pathways, and the RRS calculations. Soil COI are listed presented on Table 1 (all tables are included in the Tables attachment), and groundwater COI are presented on Table 2.

3.3 Site Assessment Completed In Current Reporting Period

3.3.1 Monitoring Well Installation

On August 24-31, 2015, monitoring wells MW-12D, MW-13D, and MW-14 were constructed at the Site. The well locations are shown on Figure 3, and boring logs with monitoring well construction information are included in Appendix D. At least one day following well installation, the wells were developed to remove residual sediments.

Wells MW-12D and MW-13D were installed to determine the PCE concentrations in groundwater in the partially weathered rock (PWR) zone immediately above the bedrock interface in the area of shallow well MW-7 (MW-12D) and immediately adjacent to and down-gradient of the PCE release area (MW-13D). MW-14 was installed to delineate benzene, detected in a groundwater sample collected from temporary well TW-4 during a 2009 investigation, the south.

MW-12D was installed as a triple-cased well using mud rotary and auger drilling methods. The borehole was drilled to 45 feet below the ground surface (ft-bgs) with a 10¼-inch outside diameter (OD) rotary bit, and an outer casing, consisting of 6-inch inside diameter (ID) Schedule 40 PVC, was installed from the ground surface to 45 ft-bgs. The casing was installed with a

grout shoe and grout was pumped down a tremmie pipe through the grout shoe to pressure-grout the casing annulus from 1 to 45 ft-bgs. The borehole was then advanced with a 4¼-inch OD mud rotary bit and 4¼-inch OD solid stem augers to the top of bedrock at 86 ft-bgs. Due to borehole cave-in, a second outer casing, consisting of 4-inch ID Schedule 40 PVC was installed from the ground surface to 70 ft-bgs. This casing was also set with a grout shoe and a tremmie pipe, and the borehole annulus was pressure-grouted from 1 to 70 ft-bgs. The borehole cave-in material was then removed using a 3¼-inch OD mud rotary bit down to the top of bedrock. A 2-inch ID, Schedule 40 PVC well with 5 feet of 0.01-inch slotted screen was installed to a total depth of 86 ft-bgs. A sand filter pack was installed from 79 to 86 ft-bgs, a bentonite seal was installed from 77-79 ft-bgs, and a grout seal was installed from 1 to 77 ft-bgs. A locking well cap was placed on the well, and the well was completed with an 8-inch diameter, flush-mounted well vault installed in a 2-ft by 2-ft concrete well pad.

MW-13D was installed as a double-cased well using mud rotary and auger drilling methods. The borehole was drilled to 45 ft-bgs with 10¼-inch OD hollow stem augers, and an outer casing, consisting of 6-inch ID Schedule 40 PVC, was installed from the ground surface to 45 ft-bgs. The casing was grouted in place using a similar method as the outer casings in MW-12D. The borehole was then advanced with a 4¼-inch OD mud rotary bit to the top of bedrock at 72 ft-bgs. A 2-inch ID, Schedule 40 PVC well with 5 feet of 0.01-inch slotted screen was installed to a total depth of 72 ft-bgs. A sand filter pack was installed from 60 to 72 ft-bgs, a bentonite seal was installed from 58 to 60 ft-bgs, and a grout seal was installed from 1 to 58 ft-bgs. A locking well cap was placed on the well, and the well was completed with an 8-inch diameter, flush-mounted well vault installed in a 14-inch diameter concrete well pad set in a concrete floor slab.

MW-14 was installed as a single-cased well using hollow stem auger drilling methods. The borehole was drilled to 35 ft-bgs with 7¼-inch OD hollow stem augers. A 2-inch ID, Schedule 40 PVC well with 10 feet of 0.01-inch slotted screen was installed inside the augers to a total depth of 35 ft-bgs. While slowly raising the augers, a sand filter pack was installed from 23 to 35 ft-bgs, a bentonite seal was installed from 21 to 23 ft-bgs and hydrated, and a grout seal was installed from 1 to 21 ft-bgs. A locking well cap was placed on the well, and the well was completed with an 8-inch diameter, flush-mounted well vault installed in a 2-ft by 2-ft concrete well pad.

3.3.2 September 2015 Monitoring Well Sampling and Results

EPS conducted sampling at the Site on September 2-4, 2015. Samples collected from all 17 existing wells were analyzed for VOCs by EPA Method 8260B. In addition, groundwater samples collected from the 15 wells located on the Roper property were also analyzed for arsenic, cadmium, total chromium, and lead by EPA Method 6010B, mercury by 7071B, and hexavalent chromium by 218.6.

Prior to purging the monitoring wells, groundwater depths in each of the wells was measured with a water level meter, which was decontaminated between wells using a phosphate-free detergent solution and a distilled water rinse. Groundwater depths and elevations are summarized on Table 3, and Figure 3 is a potentiometric surface map showing the groundwater flow direction.

Each of the wells was then purged using "tubing in screen interval" purging methods (USEPA, 2013) prior to sample collection. For wells with shallow groundwater (less than 30 ft), purging was conducted using a peristaltic pump, and for wells with deeper groundwater, a downhole pump was used. The tubing intake (peristaltic pump) or the downhole pump were lowered to the middle of the screen interval and the wells were pumped at a low flow rate until pH and conductivity stabilized (for pH, +/- 0.3 standard pH units and for conductivity, +/- 10%) and turbidity stabilized below 10 Nephelometric Turbidity Units (NTUs). Monitoring Well Sampling Forms are included in Appendix E.

Once purging was complete, samples were collected for metals analysis by pouring the water straight from the tubing into the sample containers. VOC samples were collected from peristaltic pumps by turning the pump off, bringing the tubing to the ground surface, disconnecting the tubing from the pump, and pouring the water in the tubing into the sampling vials. VOC samples were collected in two 40 milliliter (mL) glass vials preserved with hydrochloric acid, while verifying zero head space in the vials. Samples for arsenic, cadmium, chromium, lead, and mercury were collected in 250 mL bottles preserved with nitric acid. Samples for hexavalent chromium were collected in unpreserved 250 mL bottles. The samples were placed on ice in a cooler, logged under standard chain-of-custody procedures, and transported to a laboratory. Hexavalent chromium samples were overnighted to ALS in Rochester, New York and were immediately filtered and buffered in accordance with EPA Method 218.6. The VOC and other metals samples were hand delivered to Analytical Environmental Services, Inc. in Atlanta, Georgia. Laboratory reports are included in Appendix F.

Sampling results for VOCs for the September 2015 sampling event are summarized in Table 4. Figure 4A summarizes the groundwater VOC results. Figures 4B through 4G show groundwater results compared to the delineation criteria (Type 1 RRS) for PCE, trichloroethene (TCE), cis-1,2-dichloroethene (cis-DCE), 1,1,2,2-tetrachloroethane (1122-TCA), 1,1,2-trichloroethane (112-TCA), and benzene, respectively. Results from the current sampling event are generally consistent with previous sampling events.

- PCE was detected in monitoring wells located in the vicinity of the release area and down-gradient of the release area, with the highest concentration being 16,000 µg/L in MW-7. Along the eastern property line, PCE was detected at concentrations ranging from 10 µg/L to 130 µg/L. PCE was not detected in wells to the north, south, or west of the release area.
- TCE is the first in a series of PCE degradation products. TCE was detected in the same wells as PCE and often at higher concentrations, indicating that groundwater conditions are undergoing intrinsic degradation. Along the eastern property line, TCE concentrations ranged from 9.6 µg/L to 98 µg/L. TCE was not detected in wells to the north, south, or west of the release area.
- Cis-DCE is generated from the intrinsic degradation of TCE and was detected in several of the monitoring wells within the core of the plume at concentrations ranging from 5.5 µg/L to 260 µg/L.

- Other PCE degradation products, including trans-1,2-dichlorothene and vinyl chloride (VC) were not detected in the groundwater samples, indicating that the degradation process has stalled.
- 1122-TCA was not detected; however, an elevated detection limit (500 µg/L compared to previous detection of 9.2 µg/L) was used for sample MW-7 due to the elevated PCE concentration in the sample. Therefore, it is assumed at this time at that the 1122-TCA concentration in MW-7 is similar to the November 2014 detection (9.2 µg/L), and Figure 4E reflects this. 1122-TCA is often associated with PCE releases as it is often present in low concentrations in a PCE solvent.
- 112-TCA was detected in a single well (MW-9S at 10 µg/L). 112-TCA is often associated with PCE releases as it is often present in low concentrations in a PCE solvent.
- Benzene was detected in a single well in the south portion of the Site (MW-11 at 43 µg/L) and appears to be unrelated to the PCE release. This detection is consistent with prior sampling for benzene in temporary well TW-4 (130 µg/L) located at the south end of the Site approximately 120 ft up-gradient from MW-11.

Sampling results for metals for the September 2015 sampling event are summarized in Table 5. Figure 5A shows the groundwater metals concentrations. Figures 5B through 5D show groundwater results compared to the delineation criteria for total chromium, hexavalent chromium, and mercury.

- Arsenic, cadmium, and lead were not detected in the groundwater samples.
- Total chromium was detected in three of the deep wells, MW-9D, MW-12D, and MW-13D, at concentrations ranging from 18 µg/L to 79 µg/L, below the Type 1 RRS of 100 µg/L. These wells are located in and down-gradient from the PCE source area. Total chromium was not detected in any of the shallow monitoring wells (detection limit was 10 µg/L),
- Hexavalent chromium was detected in MW-9D, MW-12D, and MW-13D at concentrations ranging from 62 µg/L to 191 µg/L, which exceed the Residential (1.7 µg/L) and Non-Residential (5.7 µg/L) RRSs. In MW-14, located near the southern property corner, hexavalent chromium was detected at 3.5 µg/L, which is above the Residential RRS but below the Non-Residential RRS. Trace concentrations of hexavalent chromium was detected in the other shallow monitoring wells including the up-gradient well locations.
- Mercury was detected at 0.029 µg/L in one well, MW-9S, which is below the Type 1 RRS of 2 µg/L. Mercury is not known to be a Site-related COI.

3.4 Remediation

As described in the December 2014 VRP Application (EPS, 2014b), a soil vapor extraction (SVE) system is being operated in the PCE release area. Figure 6 shows the layout of the system. The SVE system began operation in October 2010 and the system has been operating ever since, with the exception of minor maintenance and shutdowns for carbon change-out. As

of September 2013, approximately 8,300 pounds of VOCs (PCE and minor amounts of moisture) have been removed from the soils as shown in the following table. Additional VOCs have been captured since September 2013 but have not been quantified since the carbon has not required change-out. This indicates the VOC levels in soil vapor are decreasing in response to the system operation.

Spent Carbon Shipment Date	Initial Weight of Fresh Carbon (lbs.)	Final Weight of Spent Carbon (lbs.)	PCE/Moisture Weight (lbs.)
16-Sep-13	4,000	5,418	1,418
19-Sep-12	4,000	5,734	1,734
01-Mar-12	4,000	5,930	1,930
29-Jul-11	4,000	5,407	1,407
20-Jan-11	4,000	5,870	1,870
		Total	**8,359**

4. PLANNED ACTIVITIES FOR NEXT REPORTING PERIOD

4.1 Planned Assessment and Sampling

4.1.1 Off-Property Delineation

VOC concentrations in groundwater have been delineated to the north, south, and west, while VOC concentrations in down-gradient wells (east of the release area) suggest further delineation is required to reach the delineation criteria (Type 1 RRSs). The installation of two additional off-Site monitoring wells, screened at the water table, is planned for the next reporting period. Samples from these wells will be analyzed for VOCs. These proposed well locations include the following:

- East of MW-8
- East of MW-3/MW-11

The precise locations will be determined through discussions with the EPD and the off-Site property owners.

4.1.2 On-Property Delineation

VOCs and hexavalent chromium were detected in deep wells MW-6D, MW-12D, and MW-13D at concentrations exceeding the delineation criteria. One PWR (set on top of bedrock) well is planned for installation at the eastern property boundary for down-gradient horizontal delineation of groundwater COI in the PWR. New and existing monitoring wells will be sampled for VOCs and hexavalent chromium.

4.2 Planned Remediation

The SVE system will continue to be operated during the next reporting period.

5. REFERENCES

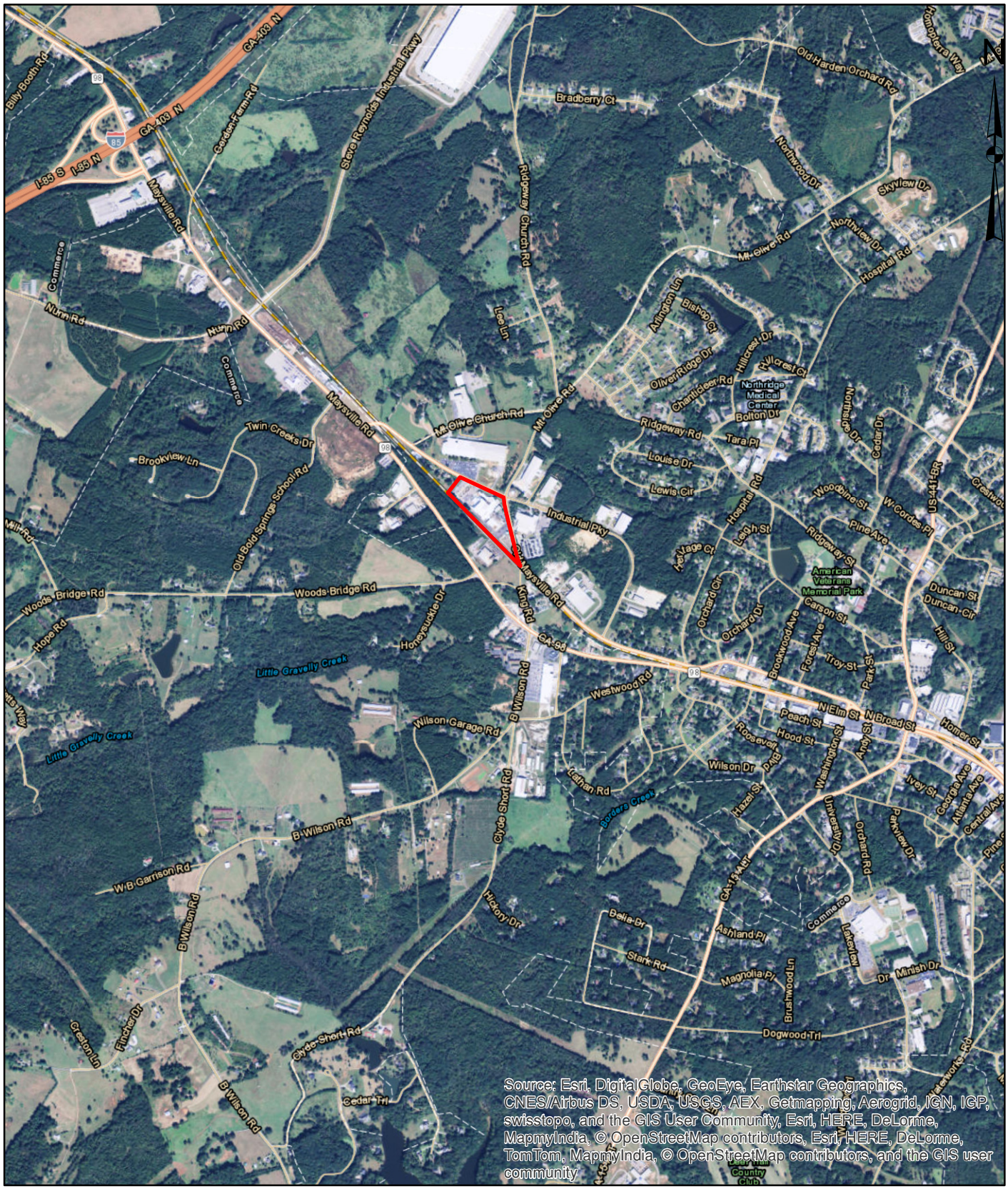
Environmental Planning Specialists, Inc. (EPS), 2014a. *Report of Site Characterization and Remedial Action*.

Environmental Planning Specialists, Inc. (EPS), 2014b. *Voluntary Remediation Program Application*

Environmental Planning Specialists, Inc. (EPS), 2015. *Technical Memorandum: Development of Soil- and Groundwater-based Risk Reduction Standards (2nd Revision).*

USEPA, 2013. *Operating Procedure: Groundwater Sampling.* US Environmental Protection Agency Science and Ecosystem Support Division, Athens, Georgia.

FIGURES



Source: ESRI On-line Ortho Photo, March 2014

0 1,000 2,000

Feet

Legend

Parcel 034 032 Boundary

Roper Pump Company
Site Location Map

EPS

F:\Roper_Pump\GIS_Projects\Data_Repor_May2014

Figure No.1

0 25 50 100
Feet

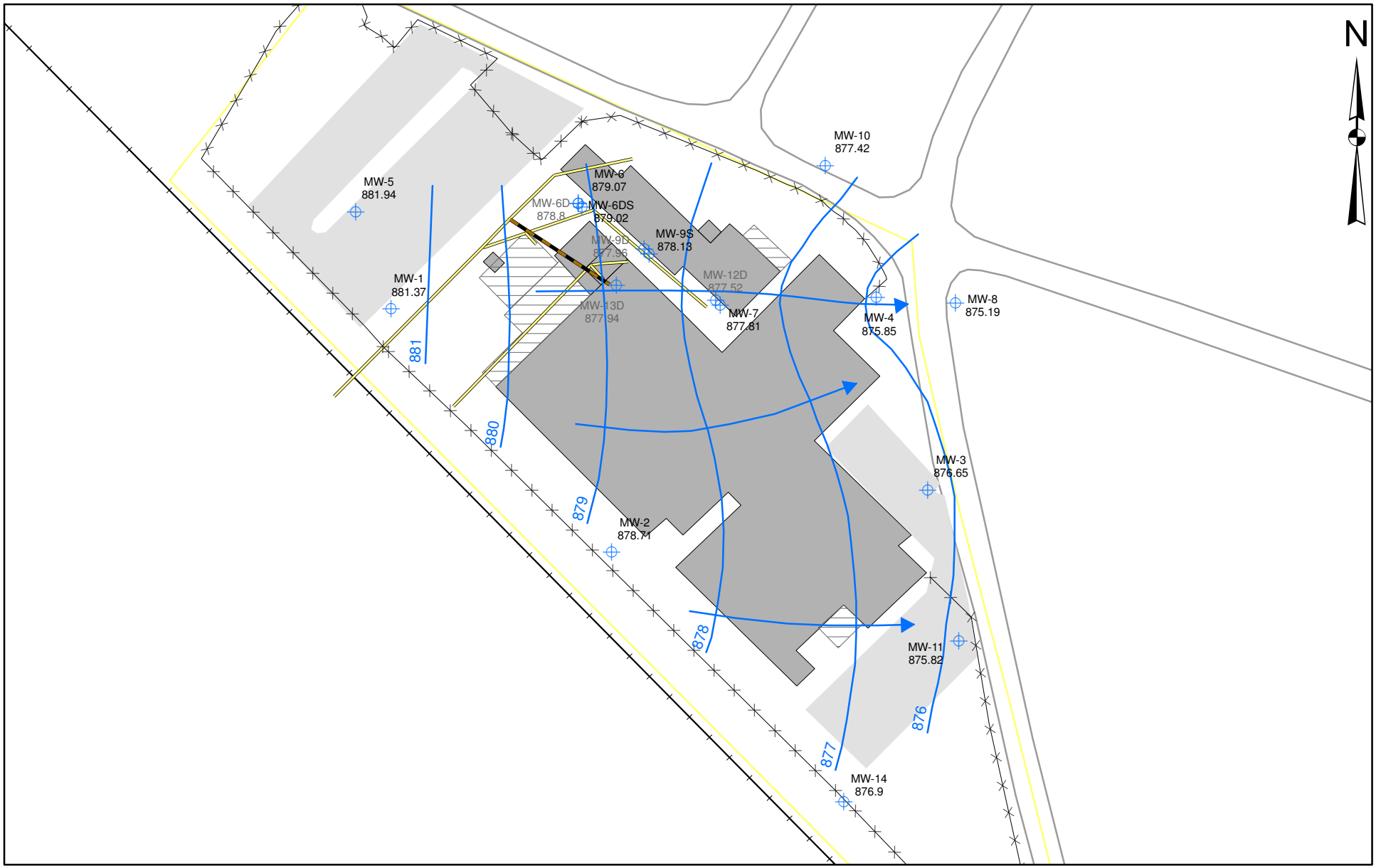
Legend

- Abandoned Storm Sewer
- Facility Drainage Ditch
- Active Storm Drain
- Fence
- 1960's Drum and Equipment Storage (approximate)

Roper Pump Company
Site Plan

EPS
F:\Roper_Pump\GIS_Projects\VRP_Application

Figure No. 2



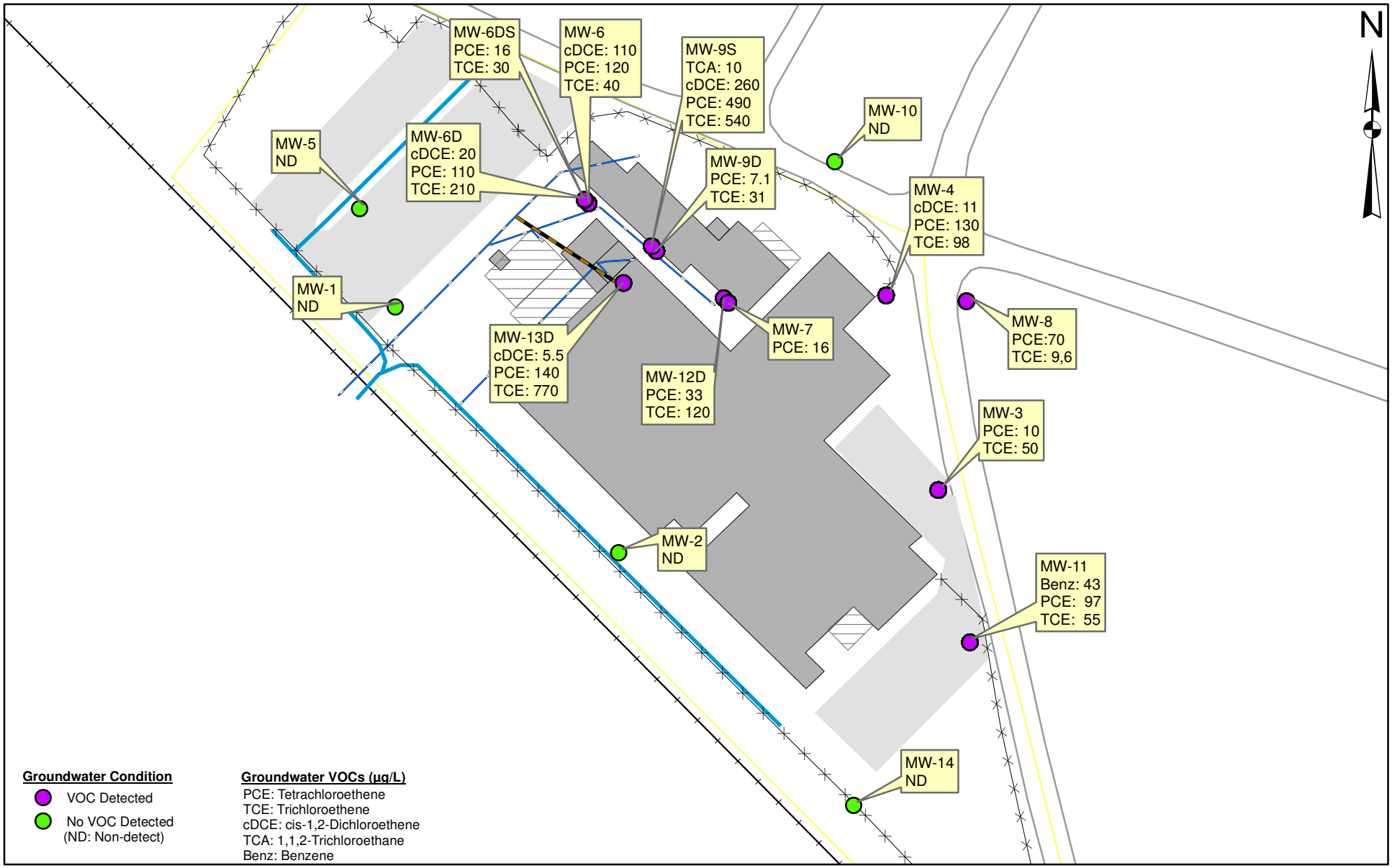
0 37.5 75 150
Feet

Legend

- Abandoned Storm Sewer
- Storm Drain
- Parking Lot
- Roads
- Fence
- Railroad
- Overhang
- Roper Property Line
- Building
- Monitoring Well Location
- 876 — Potentiometric Surface Lines (Excludes "D" wells)
- Groundwater Flow Direction
- 875.42 Groundwater Elevation at Well

Roper Pump Company
Potentiometric Surface Map (September 2015)
Figure No. 3

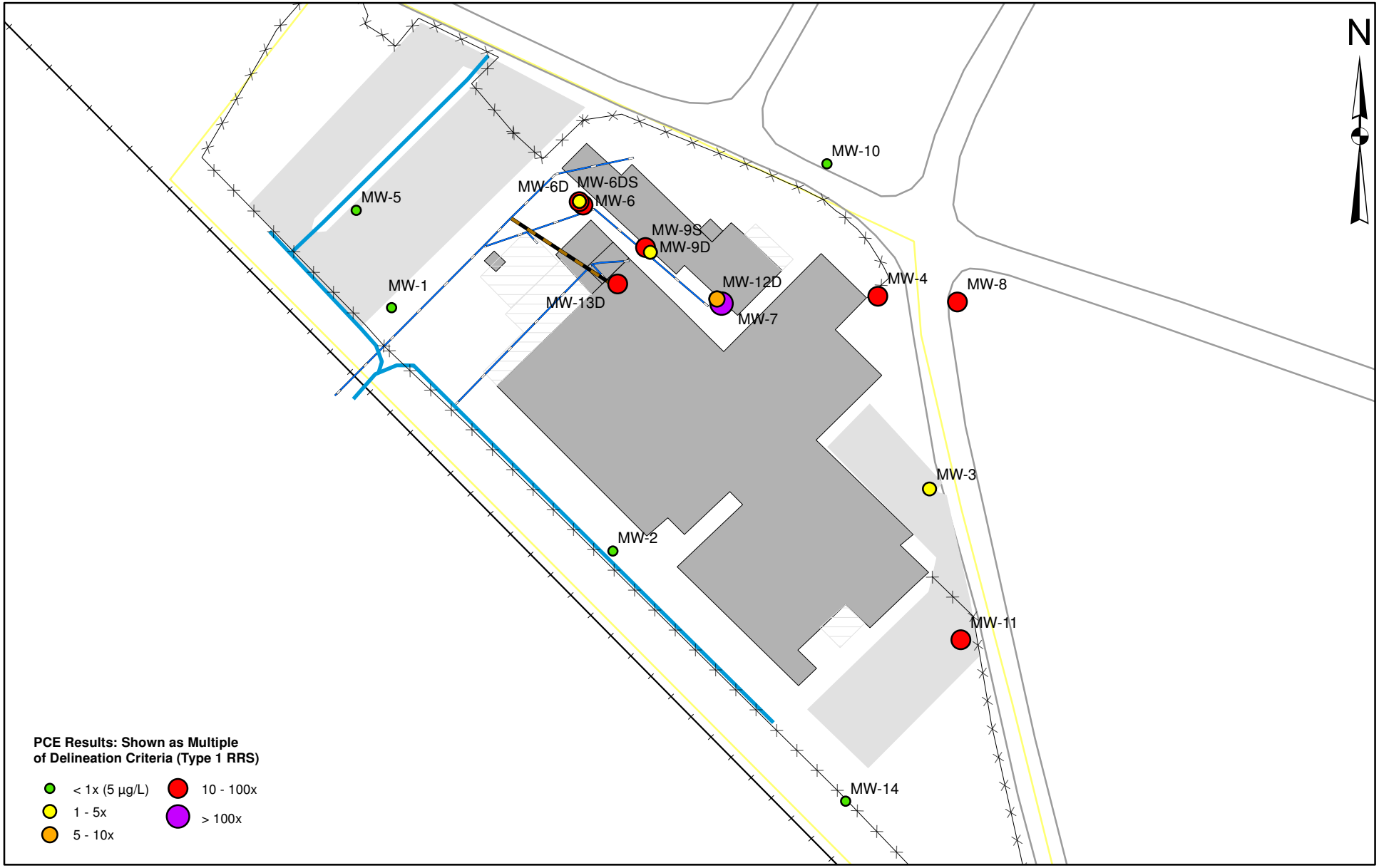
EPS
F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure3_PotMap_Sept2015.mxd



Roper Pump Company
Groundwater VOCs (September 2015)
Figure No. 4A

EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4A_GW_Organics.mxd



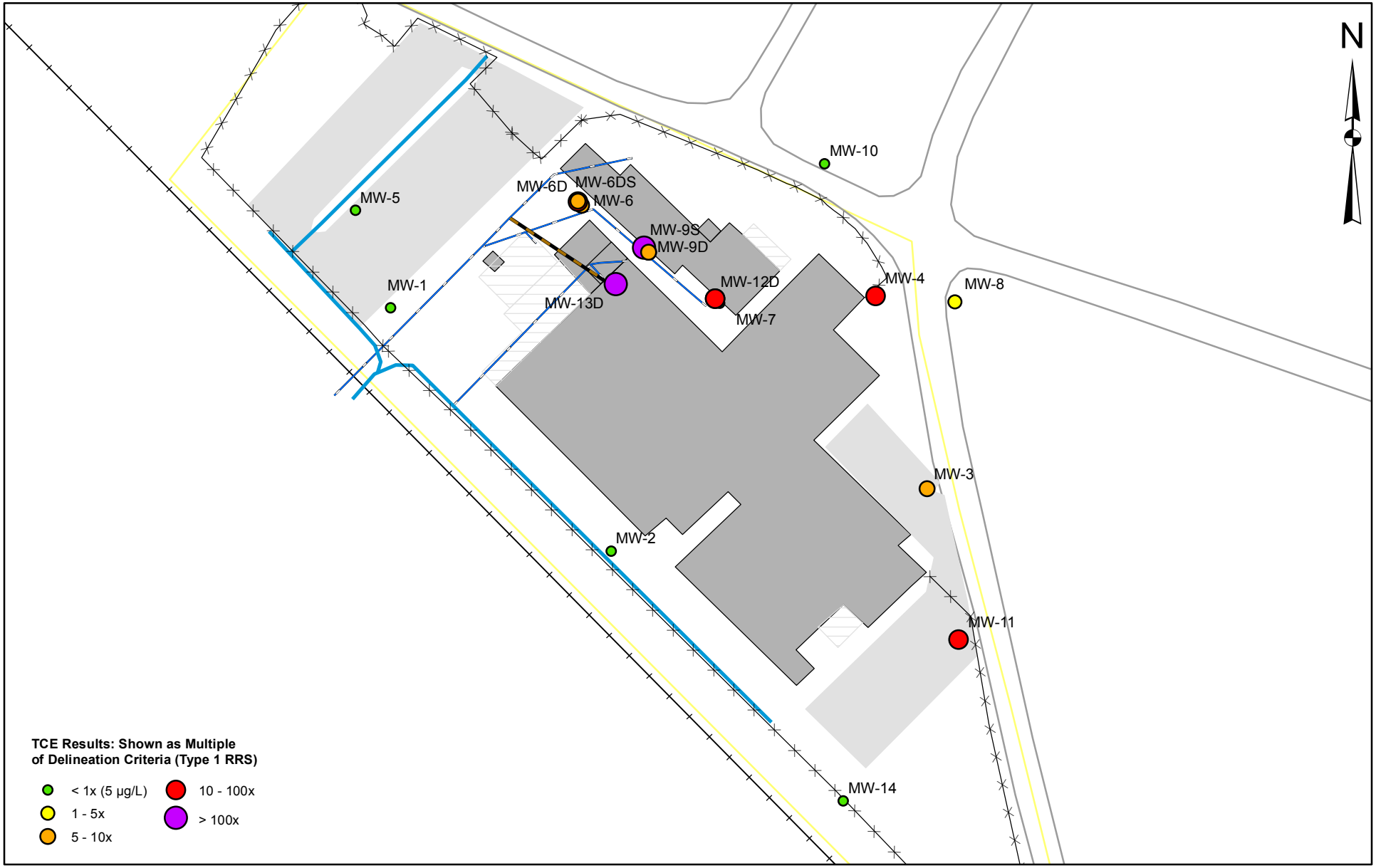
Roper Pump Company

Groundwater Tetrachloroethene (Sampled September 2015)

Figure No. 4B

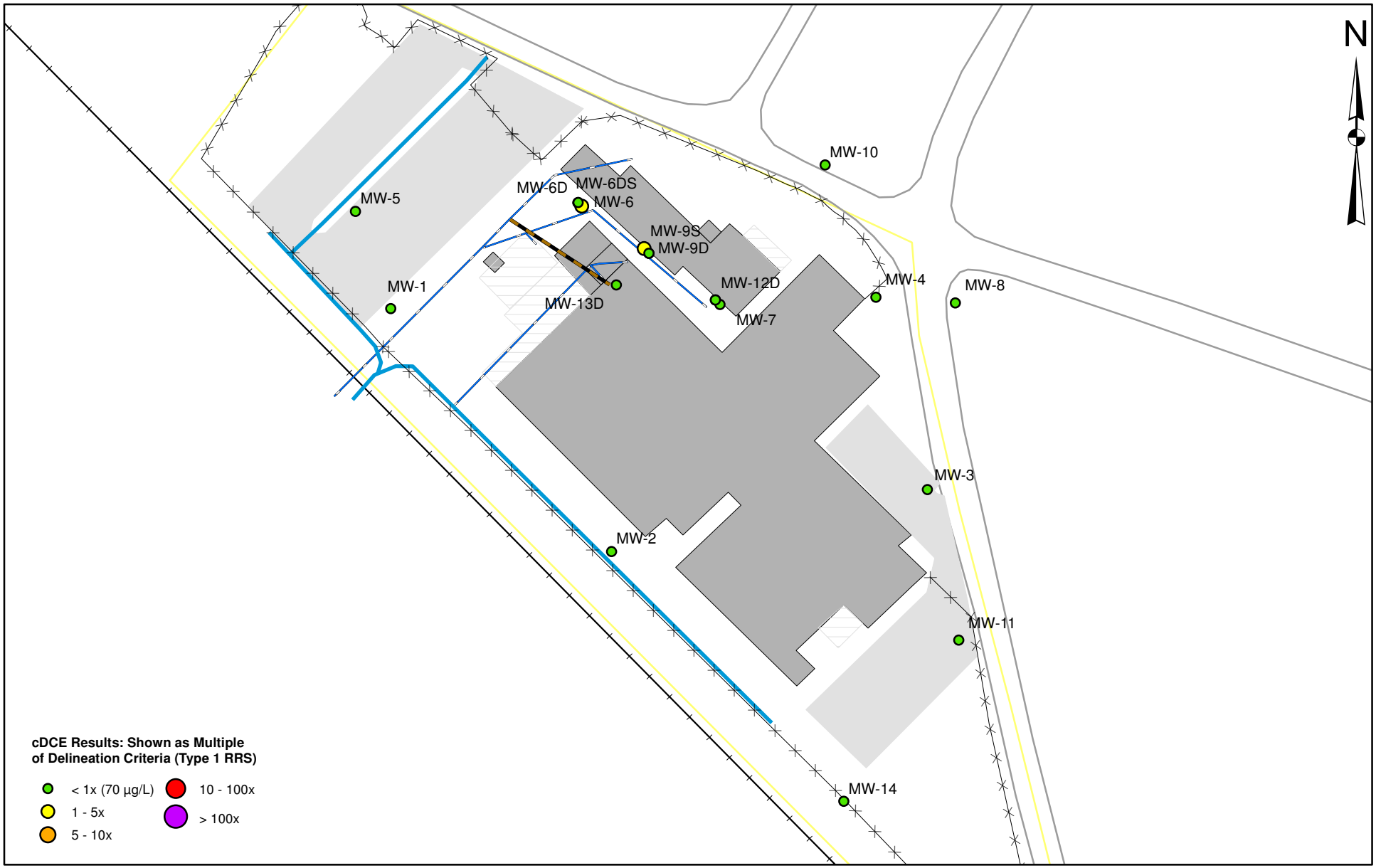
EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4B_GW_PCE.mxd



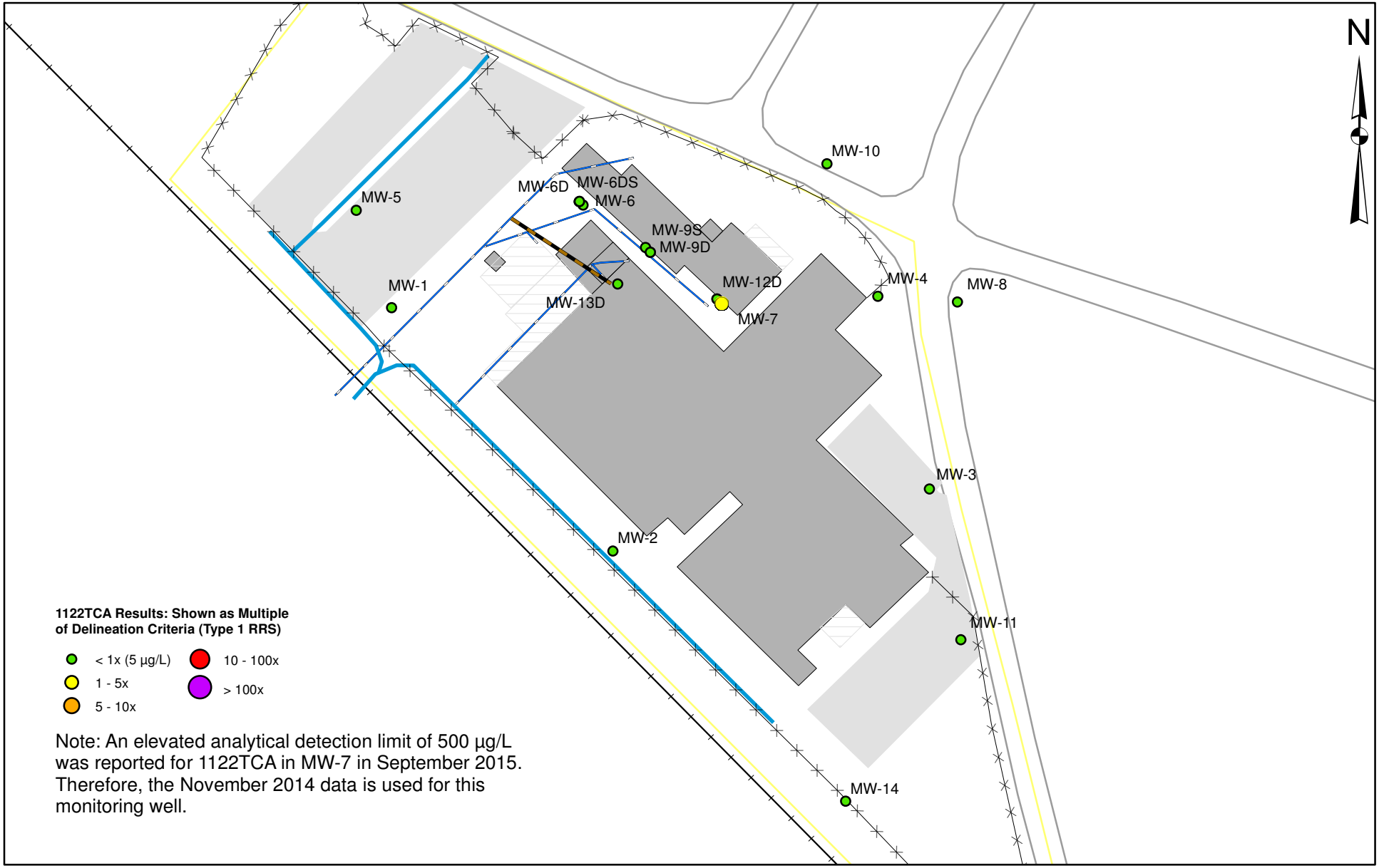
Roper Pump Company
Groundwater Trichloroethene (September 2015)
Figure No. 4C

EPS
F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4B_GW_PCE.mxd



Roper Pump Company
Groundwater cis-Dichloroethene (September 2015)
Figure No. 4D

EPS
F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4B_GW_PCE.mxd



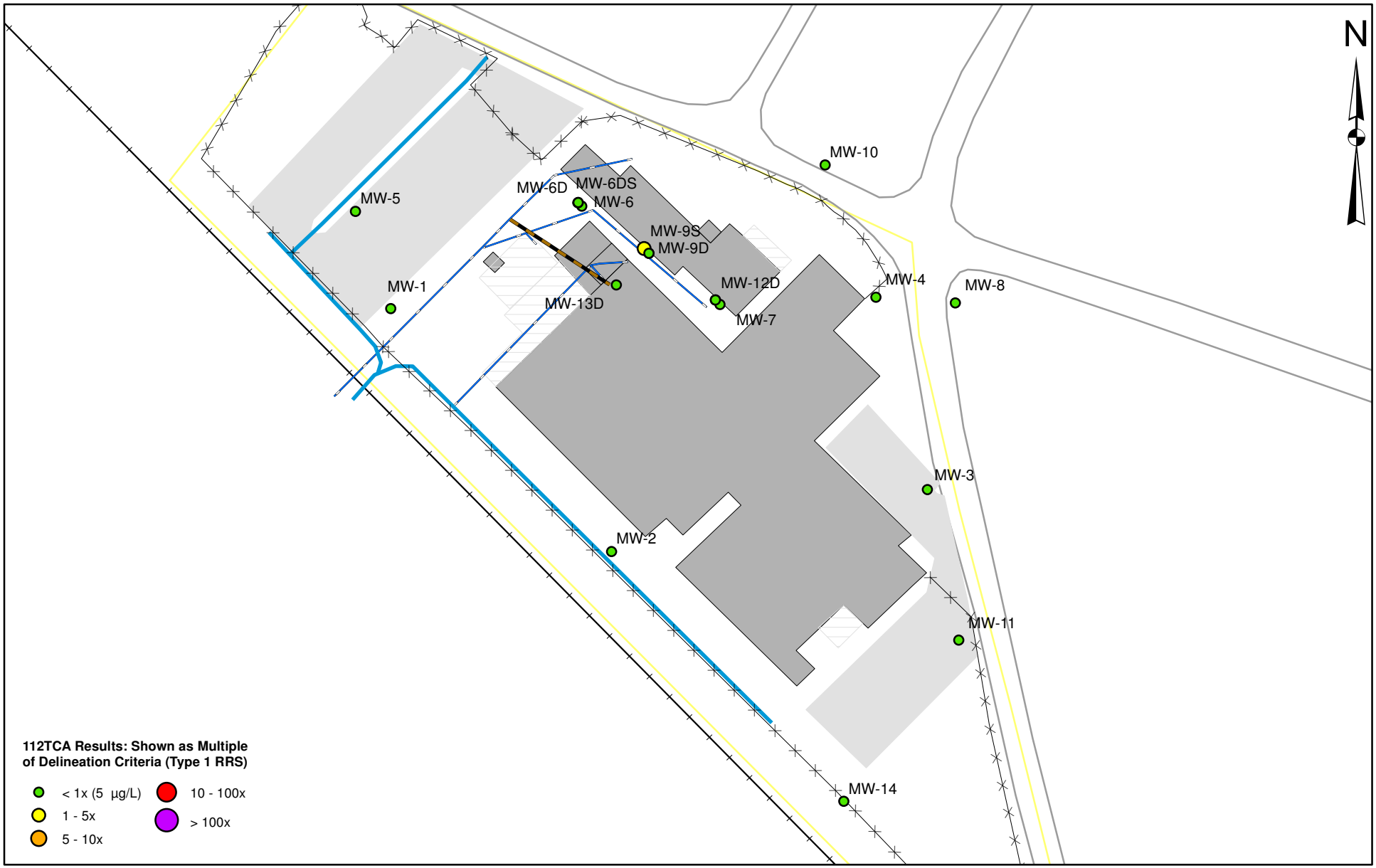
Roper Pump Company

Groundwater 1,1,2,2-Tetrachloroethane (September 2015)

EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4B_GW_PCE.mxd

Figure No. 4E



Roper Pump Company
Groundwater 1,1,2-Trichloroethane (September 2015)

EPS
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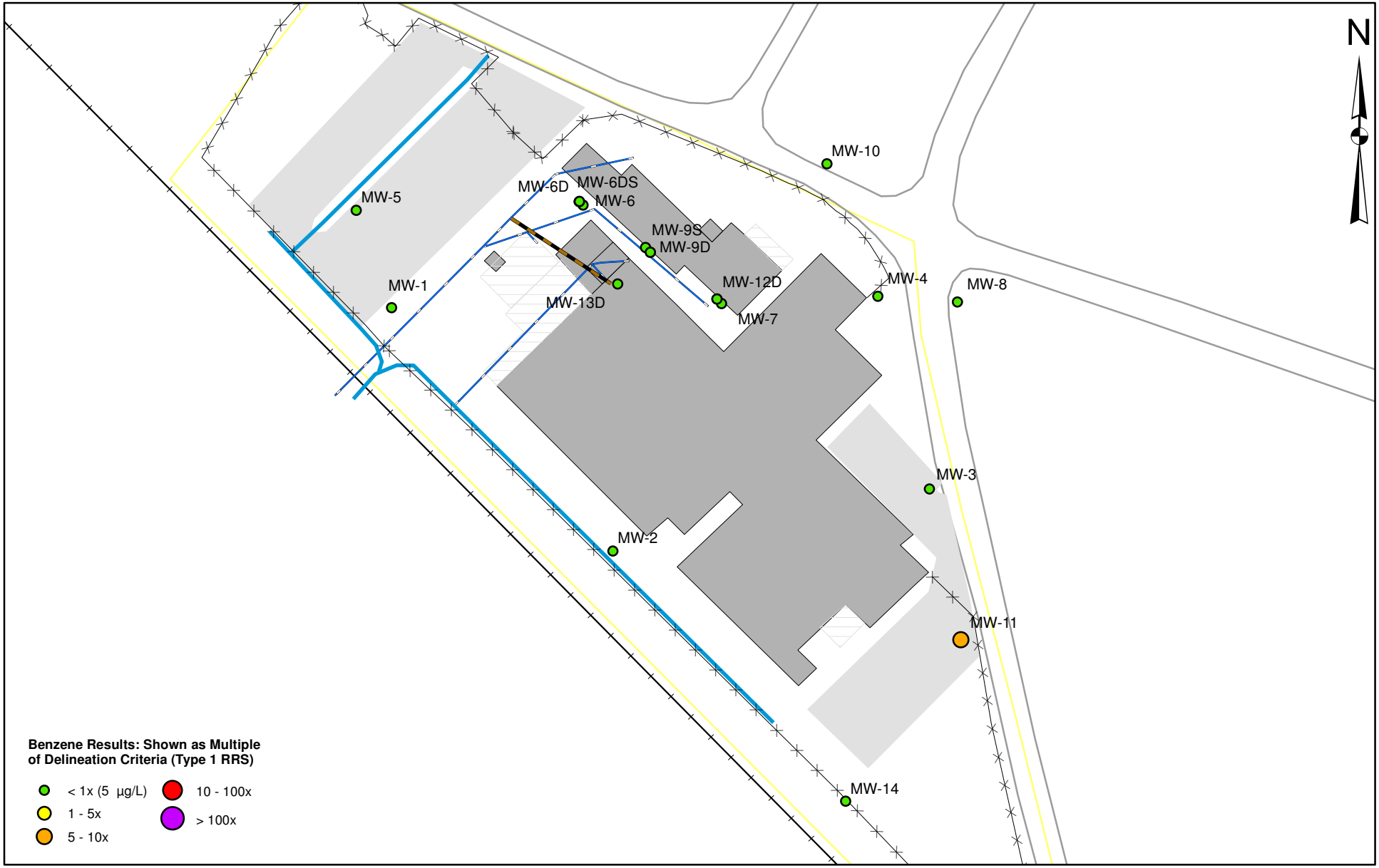
Figure No. 4F



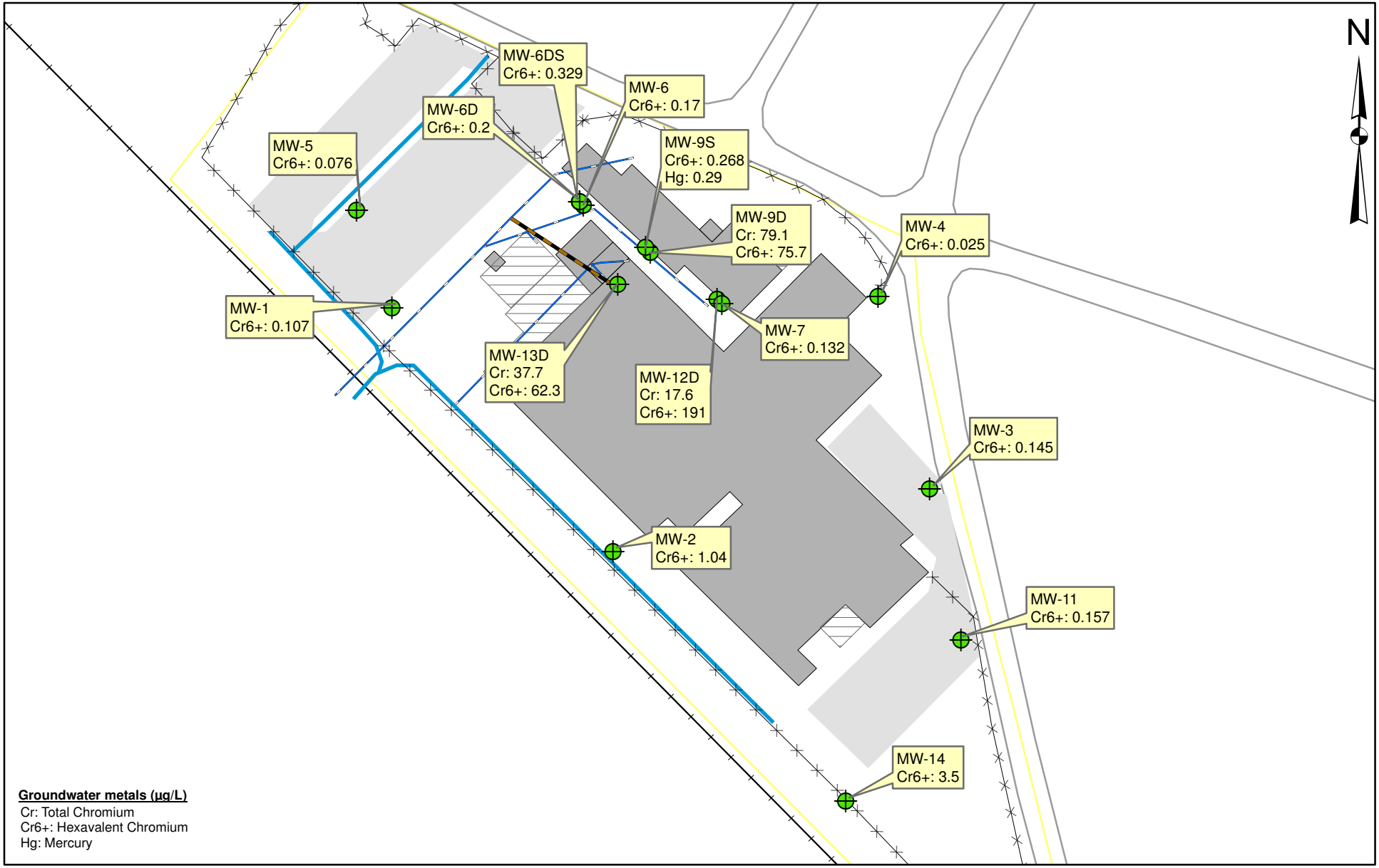
Roper Pump Company

Groundwater Benzene (September 2015)

Figure No. 4G

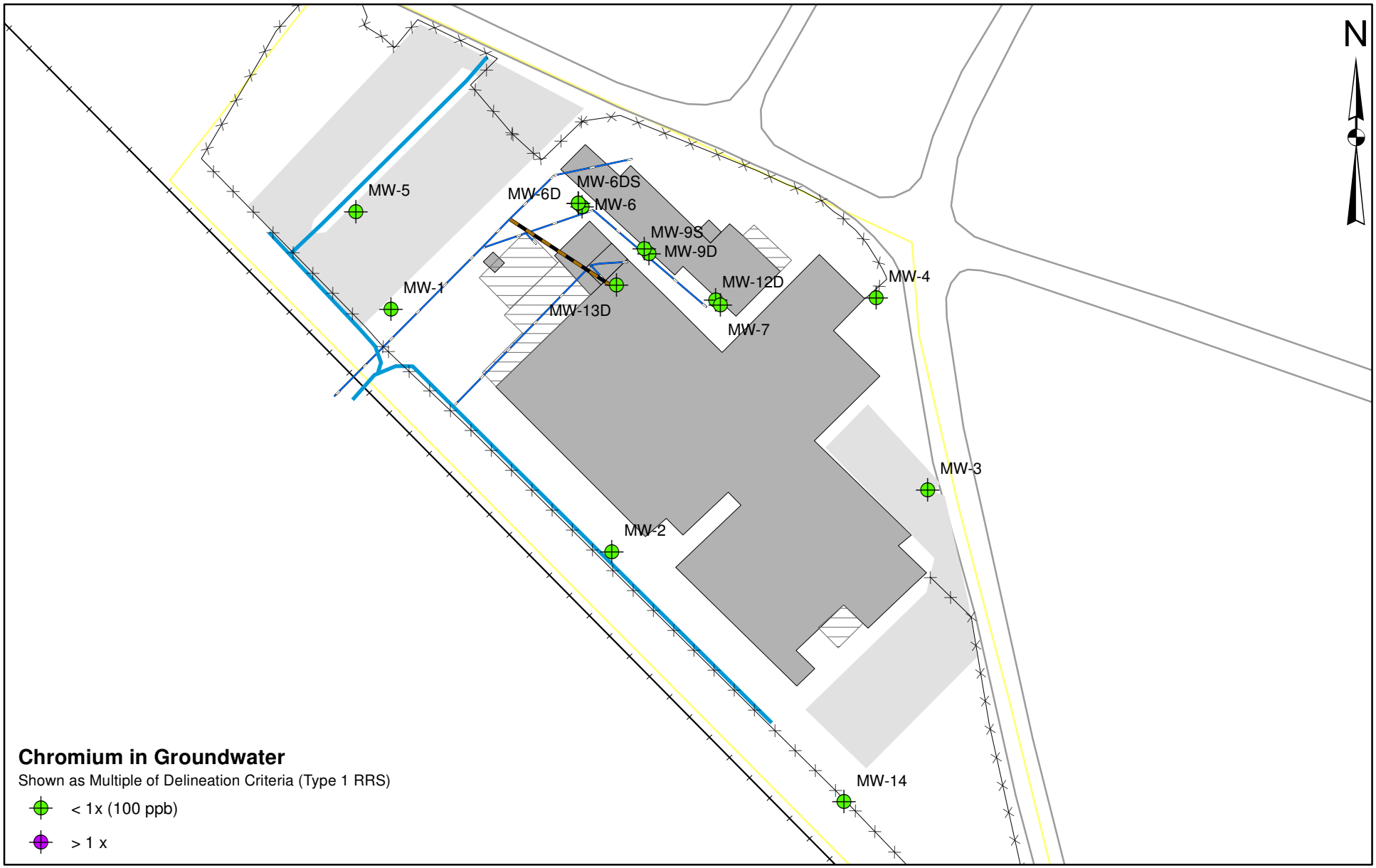
EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4B_GW_PCE.mxd



Roper Pump Company
Metals in Groundwater (September 2015)
Figure No. 5A

EPS
F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure4D_GW_HexavalentCr.mxd



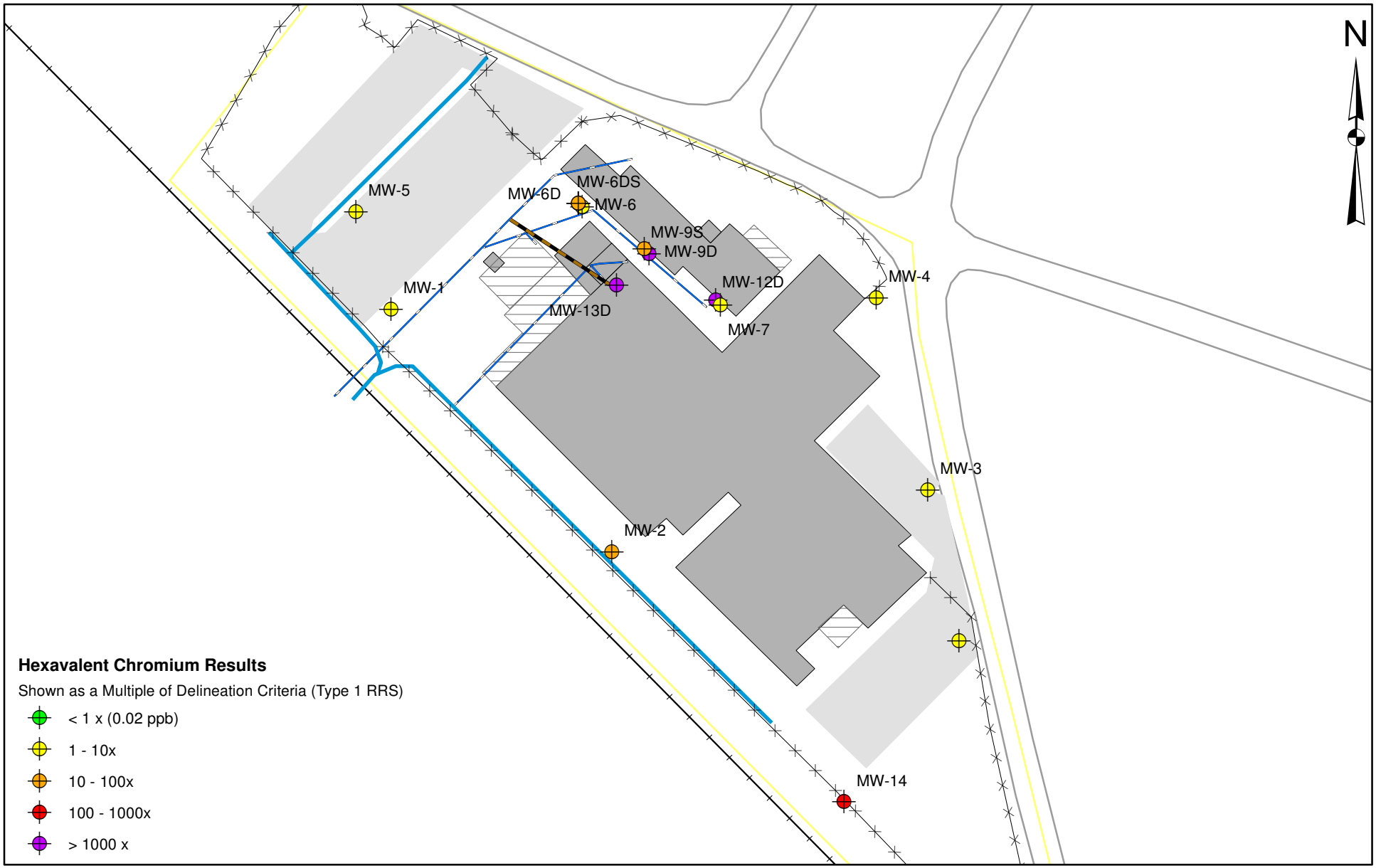
Roper Pump Company

Total Chromium in Groundwater (September 2015)

Figure No. 5B

EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure5B_GW_Cr.mxd



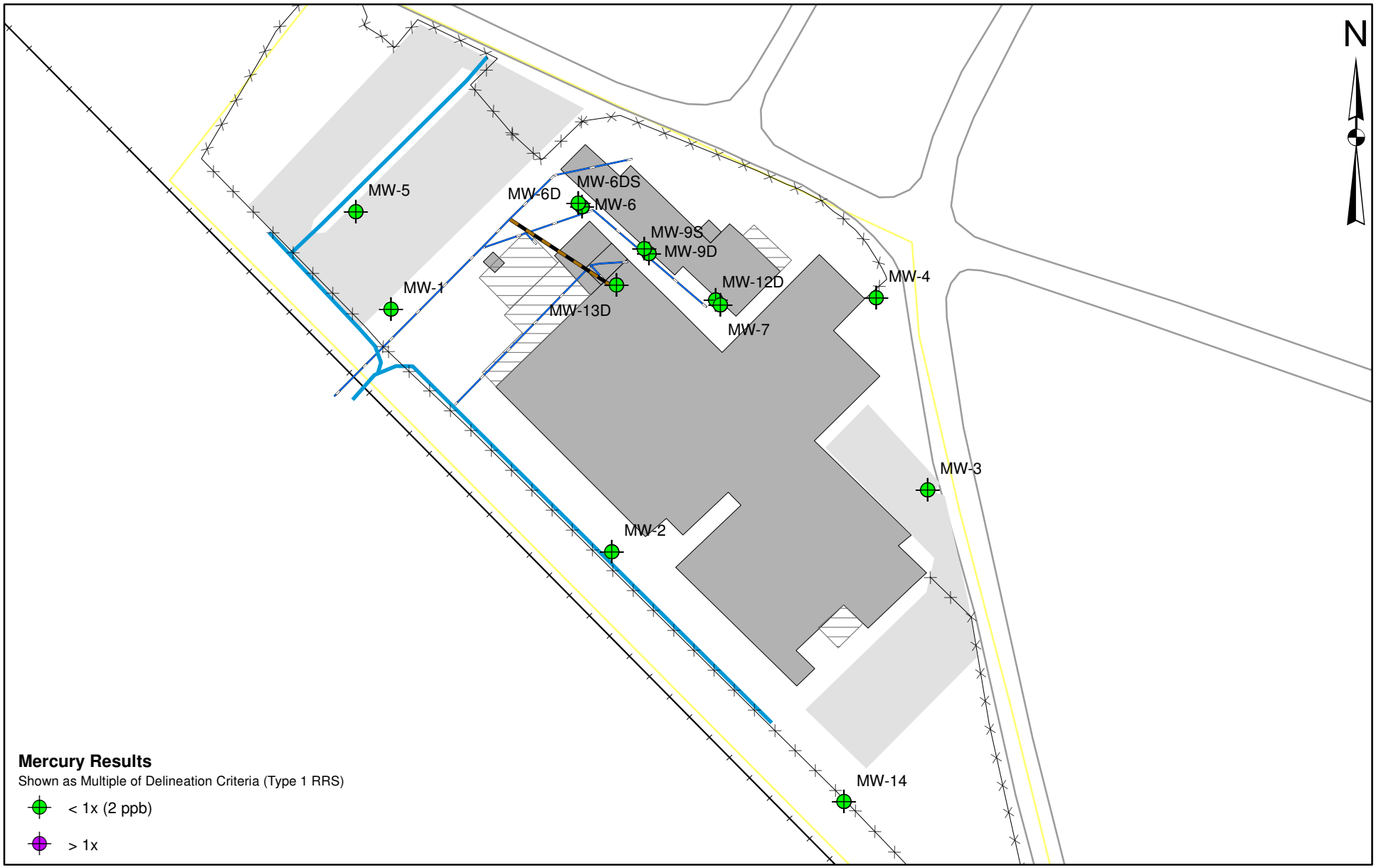
Roper Pump Company

Hexavalent Chromium in Groundwater (September 2015)

EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure5C_GW_CrVI.mxd

Figure No. 5C



Roper Pump Company

Mercury in Groundwater (September 2015)

Figure No. 5D

EPS

F:\Roper_Pump\GIS_Projects\VRP_1stProgRep\Figure5D_GW_Hg.mxd

0 12.5 25
Feet

Legend

- Passive Vented Horizontal Well
- SVE Horizontal Well

SVE Wells Phase I

- Line A
- Line B
- Line C
- Line D
- Line E
- Line F
- Line H
- Line I
- Line J
- Line K
- Line L

SVE Wells Phase II

- Line M
- Line N
- Line O
- Line P
- Line Q
- Line R
- Line S

Phase I SVE System

- Line A
- Line B
- Line C
- Line D
- Line E
- Line F
- Line H
- Line I
- Line J
- Line K
- Line L

Phase II SVE System

- M Line
- N Line
- O Line
- P Line
- Q Line
- R Line
- S Line

Roper Pump Company
SVE System Layout

EPS
F:\Roper_Pump\GIS_Projects\VRP_1stProgRep

Figure No. 6

TABLES

Table 1
Soil Delineation Criteria and Constituents of Interest
Roper Pump Company
Commerce, Georgia

Constituent	Number of Samples	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Percent Detections	Average* Concentration (mg/kg)	Type 1 RRS (mg/kg)	Type 2 RRS (mg/kg)	Delineation Criterion: Residential RRS (mg/kg)	Frequency of Residential RRS Exceedance	Percent Exceedance
1,1,2,2-Tetrachloroethane	162	ND	0.69	1%	3.5	0.13	0.0069	**0.13**	2/162	1%
1,1,2-Trichloroethane	162	ND	0.93	4%	3.5	0.5	0.032	**0.50**	1/162	1%
Acetone	162	ND	0.12	1%	70.1	400	33	**400**	0/162	0%
Arsenic	29	ND	19.8	10%	4.4	20	5.8	**20**	0/29	0%
Barium	29	12.3	76.1	100%	27.6	1000	2578	**2578**	0/29	0%
Chloroform	163	ND	0.011	2%	3.5	3.9	0.44	**3.9**	0/163	0%
Chromium (total)	29	8.8	109	100%	32.9	100	1700	**1700**	0/29	0%
Chromium VI	1	4.8	4.8	100%	4.8	29	0.65	**29**	0/1	0%
cis-1,2-Dichloroethene	162	ND	3.2	19%	3.6	7	0.41	**7**	0/162	0%
Dichloromethane (Methylene chloride)	162	ND	0.0065	2%	3.5	0.5	0.38	**0.50**	0/162	0%
Ethyl benzene	162	ND	0.005	1%	3.5	70	16.0	**70**	0/162	0%
Isopropylbenzene	162	ND	0.0074	1%	3.5	22	6.8	**22**	0/162	0%
Lead	29	9.4	76.3	100%	26.1	75	270	**270**	0/29	0%
Mercury	29	ND	0.23	10%	0.1	0.5	2.1	**2.1**	0/29	0%
o-Xylene	162	ND	0.0099	1%	3.5	20	1.2	**20**	0/162	0%
Tetrachloroethene	164	ND	12000	93%	528	0.5	0.170	**0.50**	130/164	79%
Toluene	162	ND	0.16	1%	3.5	100	14.0	**100**	0/162	0%
trans-1,2-Dichloroethene	162	ND	0.015	5%	3.5	10	1.80	**10**	0/162	0%
Trichloroethene	163	ND	24	31%	3.9	0.5	0.036	**0.50**	19/163	12%
Vinyl chloride	163	ND	0.011	1%	7.0	0.2	0.0140	**0.20**	0/163	0%

* Average calculated using 1/2 the detection limit for non-detects

EPS

Table 2
Groundwater Delineation Criteria and Constituents of Interest
Roper Pump Company
Commerce, Georgia

Constituent	Number of Samples	Minimum Concentration (µg/L)	Maximum Concentration (µg/L)	Percent Detections	Average* Concentration (µg/L)	Delineation Criterion: Type 1 RRS (µg/L)	Type 2 RRS (µg/L)	Frequency of Type 1 RRS Exceedance	Percent Exceedance
1,1,2,2-Tetrachloroethane	59	ND	100	5%	8.4	**0.2**	0.89	3/59	5%
1,1,2-Trichloroethane	57	ND	86	4%	8.1	**5**	0.12	2/57	4%
1,1-Dichloroethene	57	ND	37	2%	7.1	**7**	100	1/57	2%
Acetone	59	ND	11	2%	65	**4000**	8000	0/59	0%
Benzene	57	ND	130	5%	10	**5**	5.4	3/57	5%
Chloroform	59	ND	38	15%	8.4	**80**	2.6	0/59	0%
Chromium	14	ND	79	21%	14	**100**	100	0/14	0%
Chromium, hexavalent	16	0.025	191	100%	21	**0.02**	1.7	4/16	25%
cis-1,2-Dichloroethene	59	ND	4500	37%	170	**70**	31	22/59	37%
Mercury	14	ND	0.29	7%	0.11	**2**	0.18	0/14	0%
Tetrachloroethene	59	ND	93000	66%	2312	**5**	19	39/59	66%
Toluene	57	ND	130	2%	8.8	**1000**	880	0/57	0%
trans-1,2-Dichloroethene	59	ND	47	5%	7.8	**100**	310	0/59	0%
Trichloroethene	59	ND	2500	75%	190	**5**	1	44/59	75%

µg/L = micrograms per liter
* Average calculated using 1/2 the detection limit for non-detects

Table 3
Monitoring Well Construction Data and Groundwater Elevations
Roper Pump Company
Commerce, Georgia

Well ID	Well Completion Date	Water Level Measurment Date	Screened Interval (ft-bgs)	TOC Elevation (ft-NGVD)	Total Depth (ft-bgs)	Depth to Water (ft-BTOC)	Potentiometric Elevation (ft-NGVD)
MW-1	2/10/2014	9/1/2015	11.5 - 26.5	895.62	26.5	14.25	881.37
MW-2	2/10/2014	9/1/2015	9.9 - 24.9	896.57	24.9	17.86	878.71
MW-3	2/17/2014	9/1/2015	11.9 - 26.9	901.06	26.9	24.41	876.65
MW-4	2/18/2014	9/1/2015	9.7 - 24.7	899.10	24.7	23.25	875.85
MW-5	2/18/2014	9/1/2015	9.9 - 24.9	898.65	24.9	16.71	881.94
MW-6	2/17/2014	9/1/2015	9.2 - 24.2	898.33	24.2	19.26	879.07
MW-6D	2/14/2014	9/1/2015	33 - 43	898.31	42.85	19.51	878.80
MW-6DS	2/14/2014	9/1/2015	61 - 66	898.25	66.48	19.23	879.02
MW-7	2/18/2014	9/1/2015	9.4 - 24.4	898.12	24.4	20.31	877.81
MW-8	10/28/2014	9/1/2015	24.5 - 34.5	903.70	34.5	28.51	875.19
MW-9D	10/29/2014	9/1/2015	63.5 - 68.5	898.48	68.5	20.52	877.96
MW-9S	10/29/2014	9/1/2015	16 - 26	898.31	26	20.18	878.13
MW-10	10/29/2014	9/1/2015	29.5 - 39.5	906.94	39.5	29.52	877.42
MW-11	10/29/2014	9/1/2015	24 - 34	901.31	34	25.49	875.82
MW-12D	8/31/2015	9/1/2015	81.5 - 86.5	898.27	86.5	20.75	877.52
MW-13D	8/28/2015	9/1/2015	64 - 69	898.26	69	20.32	877.94
MW-14	8/27/2015	9/1/2015	25 - 35	899.1	35	22.20	876.90

ft-bgs = feet below ground surface
TOC = top of casing
ft-NGVD = feet above National Geodetic Vertical Datum
ft-BTOC = feet below top of casing

EPS

Table 4
Detected VOCs in Groundwater Results (September 2015)
Roper Pump Company
Commerce, Georgia

Sample ID	Date Sampled	1,1,2,2-Tetra-chloroethane (µg/L)	1,1,2-Tri-chloroethane (µg/L)	1,1-Dichloro-ethene (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Chloroform (µg/L)	cis-1,2-Di-chloroethene (µg/L)	Tetrachloro-ethene (µg/L)	Toluene (µg/L)	trans-1,2-Di-chloroethene (µg/L)	Trichloro-ethene (µg/L)
Delineation Criteria (Type 1 RRS)		**0.2**	**5**	**7**	**4000**	**5**	**80**	**70**	**5**	**1000**	**100**	**5**
Residential RRS		**0.89**	**5**	**100**	**8000**	**5.4**	**80**	**70**	**19**	**1000**	**310**	**5**
Industrial RRS		**1.3**	**5**	**520**	**46000**	**8.72**	**80**	**200**	**98**	**5200**	**2000**	**5.2**
Maximum Detected Conc		**100**	**86**	**37**	**11.2**	**130**	**38**	**4500**	**93000**	**130**	**47**	**2500**
MW-1	2/24/2014	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1
MW-1	11/7/2014	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-1	9/2/2015	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-2	2/24/2014	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1
MW-2	11/7/2014	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-2	9/3/2015	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-3	2/24/2014	<1	<1	<1	<10	<1	<1	<1	**4.5**	<1	<1	**35**
MW-3	5/19/2014	<5	<5	<5	<50	<5	**7.1**	<5	<5	<5	<5	**23**
MW-3	11/5/2014	<5	<5	<5	<50	<5	<5	<5	**8.3**	<5	<5	**55**
MW-3	9/4/2015	<5	<5	<5	<50	<5	<5	<5	**10**	<5	<5	**50**
MW-4	2/24/2014	<1	<1	<1	<10	<1	<1	**14**	**189**	<1	<1	**130**
MW-4	5/19/2014	<5	<5	<5	<50	<5	**38**	<5	**24**	<5	<5	**11**
MW-4	11/5/2014	<5	<5	<5	<50	<5	<5	**10**	**170**	<5	<5	**98**
MW-4	9/4/2015	<5	<5	<5	<50	<5	<5	**11**	**130**	<5	<5	**98**
MW-5	2/24/2014	<1	<1	<1	**11**	<1	<1	<1	<1	<1	<1	<1
MW-5	11/6/2014	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-5	9/2/2015	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-6	2/24/2014	<1	<1	<1	<10	<1	**3.6**	**1100**	**930**	<1	**1.9**	**630**
MW-6	11/5/2014	<5	<5	<5	<50	<5	<5	**190**	**110**	<5	<5	**95**
MW-6	9/2/2015	<5	<5	<5	<50	<5	<5	**110**	**120**	<5	<5	**40**
MW-6D*	2/24/2014	<1	<1	<1	<10	<1	**2.6**	**15**	**20**	<1	<1	**87**
MW-6D*	11/6/2014	<5	<5	<5	<50	<5	<5	<5	**17**	<5	<5	**29**
MW-6D*	9/2/2015	<5	<5	<5	<50	<5	<5	<5	**18**	<5	<5	**30**
MW-6DS*	2/24/2014	<1	<1	<1	<10	<1	**4.5**	**124**	**100**	<1	<1	**133**
MW-6DS*	11/6/2014	<5	<5	<5	<50	<5	<5	<5	**14**	<5	<5	**110**
MW-6DS*	9/3/2015	<5	<5	<5	<50	<5	<5	**20**	**110**	<5	<5	**210**

Table 4
Detected VOCs in Groundwater Results (September 2015)
Roper Pump Company
Commerce, Georgia

Sample ID	Date Sampled	1,1,2,2-Tetra-chloroethane (µg/L)	1,1,2-Tri-chloroethane (µg/L)	1,1-Dichloro-ethene (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Chloroform (µg/L)	cis-1,2-Di-chloroethene (µg/L)	Tetrachloro-ethene (µg/L)	Toluene (µg/L)	trans-1,2-Di-chloroethene (µg/L)	Trichloro-ethene (µg/L)
Delineation Criteria (Type 1 RRS)		**0.2**	**5**	**7**	**4000**	**5**	**80**	**70**	**5**	**1000**	**100**	**5**
Residential RRS		**0.89**	**5**	**100**	**8000**	**5.4**	**80**	**70**	**19**	**1000**	**310**	**5**
Industrial RRS		**1.3**	**5**	**520**	**46000**	**8.72**	**80**	**200**	**98**	**5200**	**2000**	**5.2**
Maximum Detected Conc		**100**	**86**	**37**	**11.2**	**130**	**38**	**4500**	**93000**	**130**	**47**	**2500**
MW-7	2/24/2014	**3.8**	<1	<1	<10	<1	<1	**25**	**2400**	<1	<1	**170**
MW-7	11/6/2014	**9.2**	<5	<5	<50	<5	<5	**27**	**14000**	<5	<5	**180**
MW-7	9/4/2015	<500	<500	<500	<5000	<500	<500	<500	**16000**	<500	<500	<500
MW-8	11/7/2014	<5	<5	<5	<50	<5	<5	<5	**70**	<5	<5	**12**
MW-8	9/3/2015	<5	<5	<5	<50	<5	<5	<5	**70**	<5	<5	**9.6**
MW-9D	11/6/2014	<5	<5	<5	<50	<5	**16**	<5	<5	<5	<5	**7.8**
MW-9D	9/2/2015	<5	<5	<5	<50	<5	<5	<5	**7.1**	<5	<5	**31**
MW-9S	11/7/2014	<5	<5	<5	<50	<5	<5	**240**	**1600**	<5	<5	**600**
MW-9S	9/2/2015	<5	**10**	<5	<50	<5	<5	**260**	**490**	<5	<5	**540**
MW-10	11/7/2014	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	**6.1**
MW-10	9/3/2015	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
MW-11	11/7/2014	<5	<5	<5	<50	**44**	<5	<5	**110**	<5	<5	**59**
MW-11	9/4/2015	<5	<5	<5	<50	**43**	<5	<5	**97**	<5	<5	**55**
MW-12D	9/3/2015	<5	<5	<5	<50	<5	<5	<5	**33**	<5	<5	**120**
MW-13D	9/3/2015	<5	<5	<5	<50	<5	<5	**5.5**	**140**	<5	<5	**770**
MW-14	9/3/2015	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
B-1	5/22/2009	<5	<5	<5	<50	<5	**16**	**2300**	600	<5	**29**	**2500**
B-10	5/21/2009	**100**	**86**	**37**	<50	<5	**23**	**4500**	**93000**	**130**	**47**	**1400**
B-11	5/21/2009	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
B-20	5/22/2009	<5	<5	<5	<50	<5	<5	**8.5**	**530**	<5	<5	**7.4**
SB-1	5/21/2009	<5	<5	<5	<50	<5	**10**	**250**	**190**	<5	<5	**810**
SB-9	5/22/2009	<5	<5	<5	<50	<5	<5	**90**	**4900**	<5	<5	**1400**
TW-1	5/27/2009	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	**14**
TW-2	5/27/2009	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
TW-3	5/27/2009	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5
TW-4	5/27/2009	<5	<5	<5	<50	**130**	<5	<5	**9**	<5	<5	**6.7**
TW-5	5/27/2009	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	**25**
TW-6	5/27/2009	<5	<5	<5	<50	<5	<5	<5	**19**	<5	<5	**6**

EPS

Table 4
Detected VOCs in Groundwater Results (September 2015)
Roper Pump Company
Commerce, Georgia

Sample ID	Date Sampled	1,1,2,2-Tetra-chloroethane (µg/L)	1,1,2-Tri-chloroethane (µg/L)	1,1-Dichloro-ethene (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Chloroform (µg/L)	cis-1,2-Di-chloroethene (µg/L)	Tetrachloro-ethene (µg/L)	Toluene (µg/L)	trans-1,2-Di-chloroethene (µg/L)	Trichloro-ethene (µg/L)
Delineation Criteria (Type 1 RRS)		**0.2**	**5**	**7**	**4000**	**5**	**80**	**70**	**5**	**1000**	**100**	**5**
Residential RRS		**0.89**	**5**	**100**	**8000**	**5.4**	**80**	**70**	**19**	**1000**	**310**	**5**
Industrial RRS		**1.3**	**5**	**520**	**46000**	**8.72**	**80**	**200**	**98**	**5200**	**2000**	**5.2**
Maximum Detected Conc		**100**	**86**	**37**	**11.2**	**130**	**38**	**4500**	**93000**	**130**	**47**	**2500**
TW-7	5/27/2009	<5	<5	<5	<50	<5	<5	**9.4**	**33**	<5	<5	**60**
TW-8	5/27/2009	<5	<5	<5	<50	<5	<5	**230**	**37**	<5	<5	**180**

µg/L = micrograms per liter
RRS = Risk Reduction Standard
Exceeds Residential RRS
Exceeds Non-Residential and Residential RRS

* MW-6D and MW-6DS were installed by a previous consultant. EPS previously documented that MW-6D was the deeper of the two wells; however, in comparing lab data from the 2015 event and the Feb 2014 event (by previous consultant), it is now understood that MW-6DS is the deeper well. The laboratory data was swapped between the two wells for input into this report.

Table 5
Metals in Groundwater (September 2015)
Roper Pump Company
Commerce, Georgia

Sample ID	Date Sampled	Arsenic (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Hexavalent Chromium (µg/L)	Lead (µg/L)	Mercury (µg/L)
Delineation Criteria (Type 1 RRS)		**10**	**5**	**100**	**0.02**	**15**	**2**
Residential RRS		**10**	**≥5**	**100**	**1.7**	**15**	**2**
NonResidential RRS		**10**	**NC**	**100**	**5.7**	**15**	**2**
Maximum Detected Conc		**ND**	**ND**	**79.1**	**191**	**ND**	**0.29**
MW-1	9/2/2015	<50	<5	<10	**0.107**	<10	<0.2
MW-2	9/3/2015	<50	<5	<10	**1.04**	<10	<0.2
MW-3	9/4/2015	<50	<5	<10	**0.145**	<10	<0.2
MW-4	9/4/2015	<50	<5	<10	**0.025**	<10	<0.2
MW-5	9/2/2015	<50	<5	<10	**0.076**	<10	<0.2
MW-6	9/2/2015	<50	<5	<10	**0.17**	<10	<0.2
MW-6D*	9/3/2015	<50	<5	<10	**0.329**	<10	<0.2
MW-6DS*	9/2/2015	<50	<5	<10	**0.2**	<10	<0.2
MW-7	9/4/2015	<50	<5	<10	**0.132**	<10	<0.2
MW-9D	9/2/2015	<50	<5	**79.1**	**75.7**	<10	<0.2
MW-9S	9/2/2015	<50	<5	<10	**0.268**	<10	**0.29**
MW-11**	9/4/2015	NA	NA	NA	**0.157**	NA	NA
MW-12D	9/3/2015	<50	<5	**17.6**	**191**	<10	<0.2
MW-13D	9/3/2015	<50	<5	**37.7**	**62.3**	<10	<0.2
MW-14	9/3/2015	<50	<5	<10	**3.5**	<10	<0.2

µg/L = micrograms per liter
RRS = Risk Reduction Standards
NC = Not Calculated
ND = Non-Detect
NA = Not Analyzed
Exceeds Residential RRS
Exceeds NonResidential and Residential RRS

* MW-6D and MW-6DS were installed by a previous consultant. EPS previously documented that MW-6D was the deeper of the two wells; however, in comparing lab data from the 2015 event and the Feb 2014 event (by previous consultant), it is now understood that MW-6DS is the deeper well. The laboratory data was swapped between the two wells for input into this report.

** Purge water was turbulent and would not clear up. Unfiltered samples were not analyzed.

EPS

APPENDIX A

Professional Geologist Summary of Hours

Environmental Planning Specialists, Inc.
Roper Pump PG Hours (Justin Vickery)
April 2015 through September 2015

	Apr 15	May 15	Jun 15	Jul 15	Aug 15	Sep 15	TOTAL
Roper Pump Company:Site Remediation							
A-Associate:A-Meeting	1.00	0.00	0.00	0.00	0.00	0.00	1.00
A-Associate:A-Project Support	1.00	0.00	0.00	0.00	0.00	0.00	1.00
Total Roper Pump Company:Site Remediation	2.00	0.00	0.00	0.00	0.00	0.00	2.00
Roper Pump Company:Site Remediation:General Consulting							
A-Associate:A-Meeting	0.00	0.00	0.00	0.00	1.50	0.00	1.50
A-Associate:A-Project Management	0.00	0.00	0.00	0.00	13.50	2.50	16.00
A-Associate:A-Project Support	0.00	0.00	0.00	0.00	7.25	0.50	7.75
A-Associate:A-Teleconference	0.00	0.00	0.00	0.00	0.50	0.00	0.50
Total Roper Pump Company:Site Remediation:General Consulting	0.00	0.00	0.00	0.00	22.75	3.00	25.75
Roper Pump Company:Site Remediation:MW Sampling Event							
A-Associate:A-Project Management	0.00	0.00	0.00	0.00	2.75	6.00	8.75
Total Roper Pump Company:Site Remediation:MW Sampling Event	0.00	0.00	0.00	0.00	2.75	6.00	8.75
Roper Pump Company:Site Remediation:RRS Revisions							
A-Associate:A-Project Support	0.00	0.00	0.00	0.00	2.00	0.00	2.00
Total Roper Pump Company:Site Remediation:RRS Revisions	0.00	0.00	0.00	0.00	2.00	0.00	2.00
Roper Pump Company:Site Remediation:VRP Progress Report							
A-Associate:A-Document Preparation	0.00	0.00	0.00	0.00	0.00	10.50	10.50
Total Roper Pump Company:Site Remediation:VRP Progress Report	0.00	0.00	0.00	0.00	0.00	10.50	10.50
TOTAL	**2.00**	**0.00**	**0.00**	**0.00**	**27.50**	**19.50**	**49.00**

APPENDIX B

Milestone Schedule

PROJECTED MILESTONE SCHEDULE
Roper Pump Company
Commerce, Georgia

Task Name	2015			2016				2017				2018				2019				2020
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
VRP Enrollment (approval)	X																			
On-Property Horizontal Groundwater Delineation																				
On-Property Vertical Delineation																				
Off-Property Horizontal Groundwater Delineation																				
Apply to Include Off-Site Properties In VRP																				
Semi-Annual Progress Reports			X																	
Updated CSM, Final Remdiation Plan, and Preliminary Cost Estimate																				
Remedial Activities																				
Compliance Status Report																				

Notes:
Planned Activity
Reporting Period Progress Complete
X Completed Activity

APPENDIX C

Conceptual Site Model

CONCEPTUAL SITE MODEL UPDATE

A comprehensive Conceptual Site Model (CSM) was presented in the December 2015 Voluntary Remediation Plan Application. Since that time, additional monitoring wells have been installed and additional constituents have been detected in groundwater. Information is presented herein to update the CSM, specifically the cross sections, the CSM profile, and fate and transport of the constituents-of-interest (COI).

Figure Updates

Figure C-1 is a cross section location map showing the locations of Cross Sections A-A' and B-B'. Figure C-2 is Cross Section A-A' and has been updated to include wells MW-12D and MW-13D, which were installed during this reporting period. Cross Sections A-A' and B-B' (Figure C-3) were both updated with the September 2015 groundwater sampling data. Figure C-4 is an updated CSM Profile, which generalizes the subsurface geology, the VOC plume, and the potential exposure pathways.

Update to Groundwater COI

In September 2015, groundwater testing for metals was performed for arsenic, cadmium, total chromium, hexavalent chromium, lead, and mercury (Table 6 in the Tables Attachment). Hexavalent chromium was reported in all groundwater wells tested (15 wells in total) ranging from 0.025 micrograms per liter (µg/L) to 191 µg/L, total chromium was reported in three wells ranging from 12.6 to 79.1 µg/L, and mercury was reported in a single well slightly above the detection limit at 0.29 µg/L. Hexavalent chromium in four wells (MW-9D, MW-12D, NW-13D and MW-14) exceeds the residential Risk Reduction Standard (RRS) of 1.7 µg/L. All other detections for metals are below residential RRS.

Source of Hexavalent Chromium

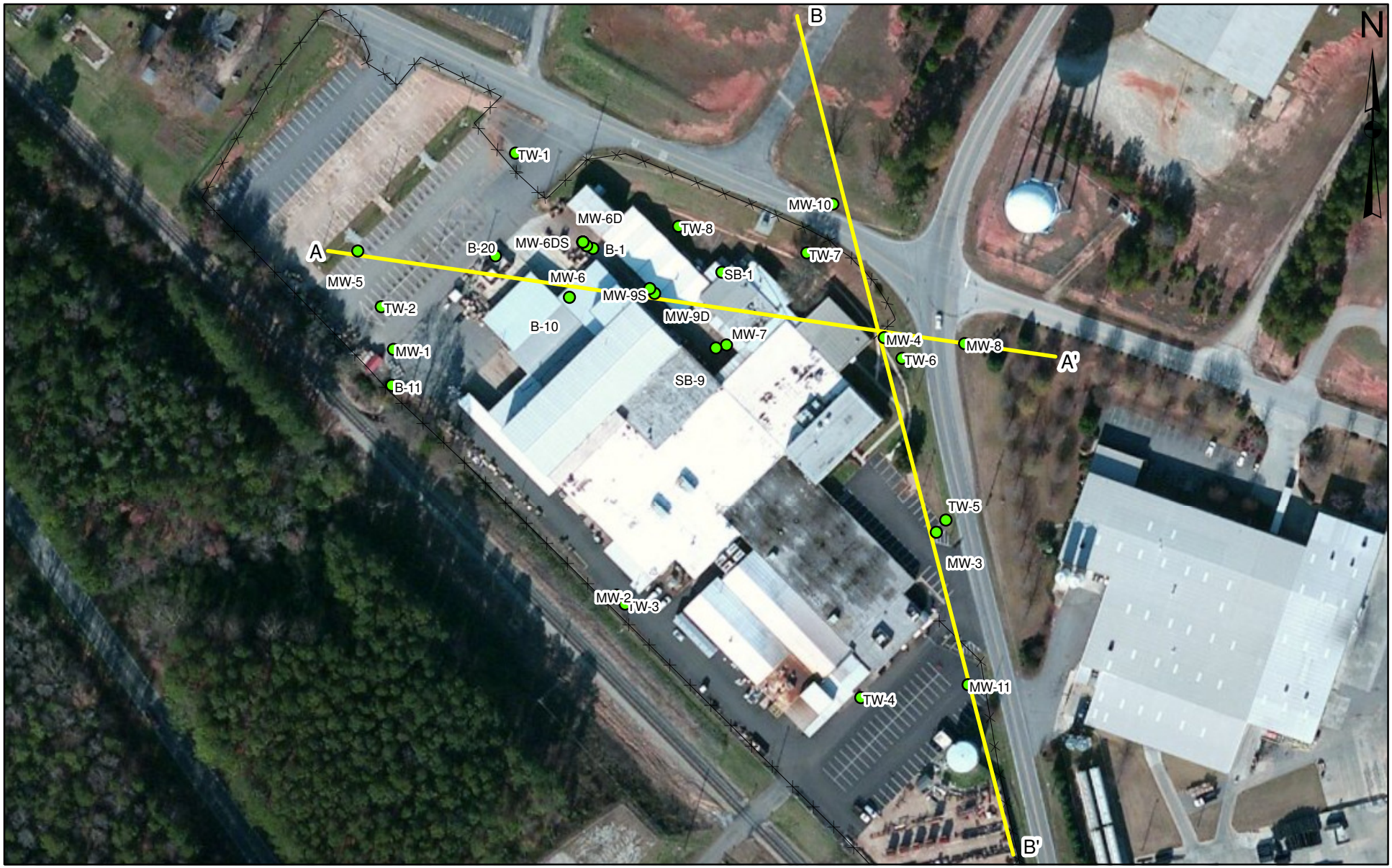
A discrete source for hexavalent chromium has not been determined for the facility, but a probable source is inferred based on the similar concentration gradient of hexavalent chromium and VOC COI in groundwater. The historical VOC release to the subsurface is believed to have occurred through a former drain near the hazardous waste storage area (EPS, 2015). The VOC release area is spatially consistent with the core of the hexavalent chromium groundwater plume. It is probable that metals, including hexavalent chromium, would have been present in and co-released with a spill of VOC if the spilled VOCs were used for metal parts cleaning or other manufacturing processes in which the VOC COI contacted metals.

Fate and Transport of Metal COI

In the event hexavalent chromium is released to groundwater, its fate and transport is determined by the prevailing geochemical conditions of the aquifer. Under oxidizing conditions (or high ORP) and neutral pH, hexavalent chromium, which is readily soluble, will persist in groundwater in the absence of natural reductants. Transformation of hexavalent chromium to trivalent chromium is

favored under reducing conditions (low ORP) and in the presence of natural reductants including Fe^{2+}, Mn^{2+}, reduced sulfides, and natural organic matter. Trivalent chromium is largely insoluble under natural groundwater conditions and rapidly precipitates or adsorbs to aquifer materials thus immobilizing the chromium providing a pathway for natural attenuation. In the presence of natural oxidants, most notably manganese dioxide, trivalent chromium may also be oxidized to the mobile hexavalent form.

The persistence of hexavalent chromium in groundwater is facilitated by its low tendency to adsorb to aquifer materials under normal groundwater conditions. These properties allow for the advective and dispersive transport of hexavalent chromium with groundwater until geochemical conditions favor the chemical transformation to trivalent chromium. The tendency of hexavalent chromium to readily transport with groundwater in contrast to the VOC COI, which tend to strongly sorb to soil and aquifer materials, reasonably explains the observed vertical partitioning of hexavalent chromium in Site groundwater. Hexavalent chromium is generally reported at greater concentrations with depth compared to VOC COI, consistent with its soil adsorption properties. The vertical distribution of hexavalent chromium is a recognized data gap that will be address with proposed news wells and analysis of the aquifers geochemical characteristics to identify potential natural attenuation processes that appear to be limiting the horizontal transport of hexavalent chromium, but allowing for a degree of vertical transport.



Plan View Layout
Cross Section Locations

EPS

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Figure No. C-1

(West) A

A' (East)

920
900
880
860
840
820
800

MW-5 (Projected)
TW-2 (Projected)
MW-1 (Projected)
B-20
MW-6 & MW-6DS &MW-6D (Projected)
B-10
B-1 (Projected)
MW-13D (Projected)
MW-9S (Projected)
MW-9D (Projected)
SB-9
MW-12D (Projected)
MW-7
MW-4 (Projected)
TW-6 (Projected)
MW-8 (Projected)

MW-5	
PCE	ND
TCE	ND
cDCE	ND

TW-2	
PCE	ND
TCE	ND
cDCE	ND

MW-1	
PCE	ND
TCE	ND
cDCE	ND

MW-6	
PCE	120
TCE	40
cDCE	110

B-20	
PCE	530
TCE	7.4
cDCE	8.5

MW-6DS	
PCE	18
TCE	30
cDCE	ND

B-10	
PCE	93,000
TCE	1,400
cDCE	4,500
1122TCA	100
112TCA	86

B-1	
PCE	600
TCE	2500
cDCE	2300

MW-9S	
PCE	490
TCE	540
cDCE	260
112TCA	10

SB-9	
PCE	4,900
TCE	1,400
cDCE	90

MW-7	
PCE	16,000
TCE	ND
cDCE	ND
1122TCA	ND

MW-4	
PCE	130
TCE	98
cDCE	11

TW-6	
PCE	19
TCE	6
cDCE	ND

MW-8	
PCE	70
TCE	9.6
cDCE	ND

MW-6D	
PCE	110
TCE	210
cDCE	ND

MW-13D	
PCE	140
TCE	770
cDCE	5.5

MW-9D	
PCE	7.1
TCE	31
cDCE	ND

MW-12D	
PCE	33
TCE	120
cDCE	ND

VERT. SCALE (FT) 0 20 40

HORIZ. SCALE (FT) 0 75 150

EPS

F:\Roper_Pump\1 Reports\VRP Progress Reports\2015 October\App C CSM\CMS Figures\Fig C-2 Cross Section A-A' (parallel to axis).dwg

LEGEND

- RESIDUUM (SOIL)
- PARTIALLY WEATHERED ROCK
- BEDROCK
- WATER TABLE ELEVATION September 2015
- Projected — WELL PROJECTED INTO PLANE OF CROSS-SECTION
- APPROXIMATE GROUNDWATER PLUME
- APPROXIMATE EXTENT OF SOILS ABOVE PCE CSAT (110 mg/kg)
- SCREENED INTERVAL

Well ID	
PCE	17
TCE	29
cDCE	ND

Sample results (µg/L) In May 2009
ND = Non-detect

Well ID	
PCE	17
TCE	29
cDCE	ND

Sample Results (µg/L) In September 2015
ND = Non-detect

Roper Pump Company
Cross Section A - A'

Figure No. C-2

B (North)

B' (South)

MW-10

TW-7 (Projected)

MW-4

TW-6 (Projected)

TW-5 (Projected)

MW-3

MW-11

900

890

880

870

860

850

840

TW-7	
PCE	33
TCE	60
cDCE	8.9

MW-4	
PCE	130
TCE	98
cDCE	11

MW-3	
PCE	10
TCE	50
cDCE	ND

MW-10	
PCE	ND
TCE	ND
cDCE	ND

TW-6	
PCE	189
TCE	130
cDCE	ND

TW-5	
PCE	ND
TCE	25
cDCE	ND

MW-11	
PCE	97
TCE	55
cDCE	ND
Benzene	43

VERT. SCALE (FT) 0 10 20

0 60 120 HORIZ. SCALE (FEET)

EPS

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LEGEND

RESIDUUM (SOIL)

PARTIALLY WEATHERED ROCK (approximated based on deep wells in Hydrogeologic Profile A-A')

APPROXIMATE GROUNDWATER PLUME

SCREENED INTERVAL

WATER TABLE ELEVATION November 2014

Well ID	
PCE	17
TCE	29
cDCE	ND

Sample results (µg/L) in May 2009
ND = Non-detect

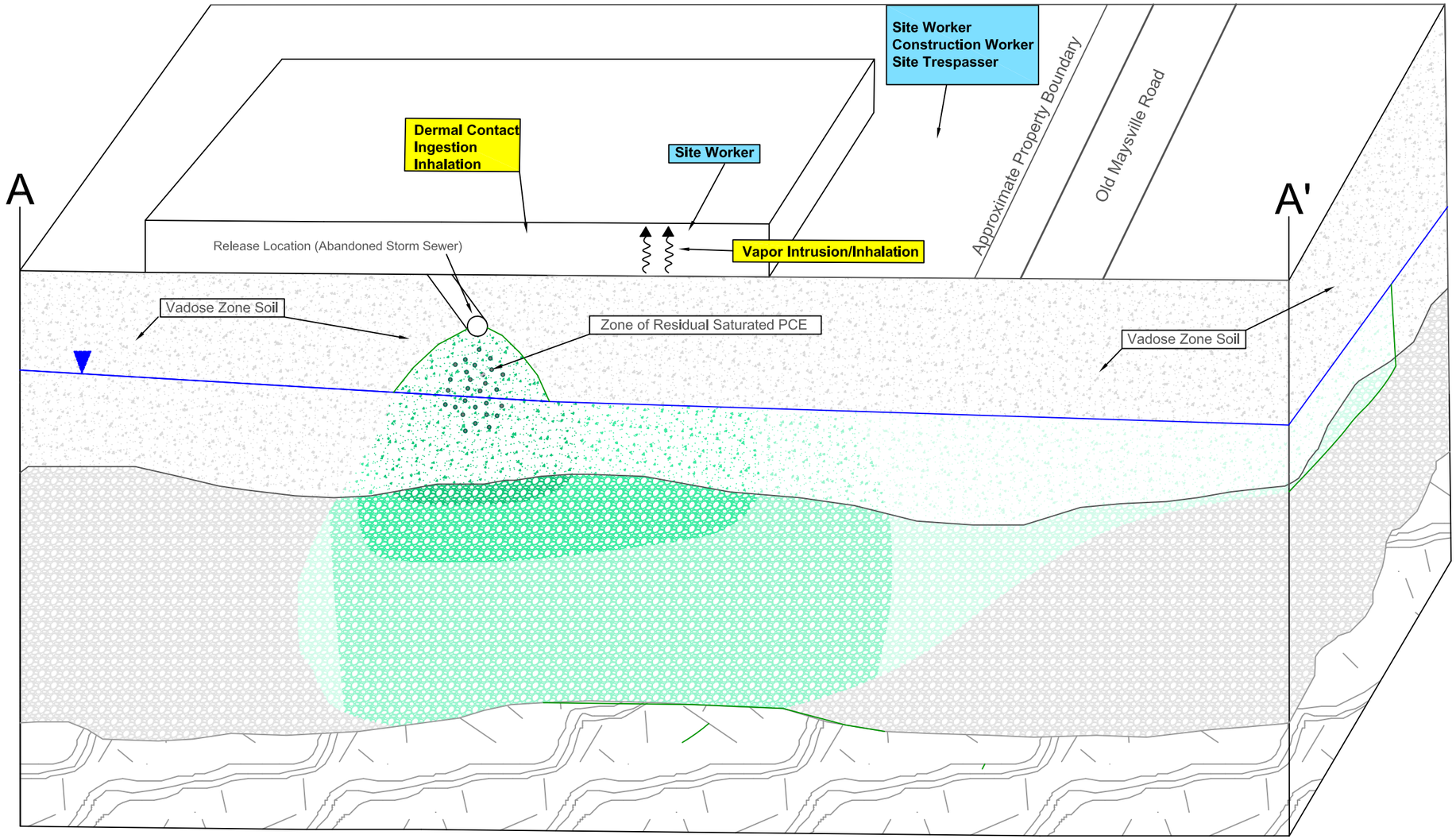
Well ID	
PCE	17
TCE	29
cDCE	ND

Sample Results (µg/L) in September 2015
ND = Non-detect

Projected WELL PROJECTED INTO PLANE OF CROSS-SECTION

Roper Pump Company
Cross Section B - B'

Figure No. C-3



NOT TO SCALE

APPROXIMATE WATER TABLE

POTENTIAL EXPOSURE RECEPTOR

POTENTIAL EXPOSURE PATHWAY

APPROXIMATE POTENTIOMETRIC SURFACE

RESIDUUM (SOIL)

PARTIALLY WEATHERED ROCK

BEDROCK

INTENSITY OF AQUEOUS PLUME

HIGHER CONCENTRATION — TRACE CONCENTRATION

CONTAMINATED VADOSE ZONE SOIL

Roper Pump Company
Conceptual Site Model (Profile)

Figure No. C-4

Environmental Planning Specialists, Inc.

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APPENDIX D

Boring Logs and Well Construction Information

Project:	Roper Pump	Log of Boring No.	MW-12D
SITE LOCATION:	Commerce, GA	TOP OF CASING ELEVATION (ft):	N/A
DRILLING CONTRACTOR:	Geo-Lab	DATE STARTED: 8/24/2015	DATE FINISHED: 8/31/2015
DRILLING METHOD:	Direct Push & Mud Rotary	TOTAL DEPTH (ft.): 86.5	SCREEN INTERVAL (ft.): 81.5-86.5
DRILLING EQUIPMENT:	CME	DEPTH TO WATER AT TIME OF BORING (ft.): N/A	CASING (ft.): 0-81.5
SAMPLING METHOD:	N/A	LOGGED BY:	J. Dennis

DEPTH (feet)	SAMPLES Blows/ Foot	PID Reading	DESCRIPTION Ground Surface Elevation: N/A	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0			Concrete	
5		0	Medium to fine orange clayey, silty sand	
			Medium to fine tan-orange silty sand	
10		0		
15		0	Medium to fine whitish-green silty sand; saprolitic	
20		0		
25			No recovery	
30				
35		6.1	Saturated coarse grain weathered rock	
40		48.3		
45		44	Gray, white, tan weathered rock	
50			White coarse grain weathered rock	
55			No recovery	
60				
65				
70				
75				
80				
85			Competent bedrock	Boring terminated at 86.5 ft bgs.
90				
95				
100				

Project:	Roper Pump	Log of Boring No.	MW-13D
SITE LOCATION:	Commerce, GA	TOP OF CASING ELEVATION (ft):	N/A
DRILLING CONTRACTOR:	Geo-Lab	DATE STARTED: 8/24/2015	DATE FINISHED: 8/28/2015
DRILLING METHOD:	Direct Push & Hollow Stem Auger	TOTAL DEPTH (ft.): 69	SCREEN INTERVAL (ft.): 64-69
DRILLING EQUIPMENT:	CME	DEPTH TO WATER AT TIME OF BORING (ft.): N/A	CASING (ft.): 0-64
SAMPLING METHOD:	N/A	LOGGED BY:	J. Dennis

DEPTH (feet)	SAMPLES Blows/ Foot	PID Reading	DESCRIPTION (Ground Surface Elevation: N/A)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0		0	Concrete	
5		0	Red, orange clay	
10		0		
15		0.5	Tan clay	
20		24.3	Tan, white, gray weathered rock	
25		31.5	Saturated red clay with weathered rock	
30		4.7	Saturated tan, gray, white weathered rock	
35		0	Saturated white, tan weathered rock	
40		0		
45			No recovery	
50				
55				
60			Rock lense	
			No recovery	
65			Rock lense	
			No recovery	
70			Competent bedrock	Boring terminated at 69 ft bgs.
75				
80				
85				
90				
95				
100				

Project:	Roper Pump	Log of Boring No.	MW-14
SITE LOCATION:	Commerce, GA	TOP OF CASING ELEVATION (ft):	N/A
DRILLING CONTRACTOR:	Geo-Lab	DATE STARTED: 8/27/2015	DATE FINISHED: 8/27/2015
DRILLING METHOD:	Direct Push & Hollow Stem Auger	TOTAL DEPTH (ft.): 35	SCREEN INTERVAL (ft.): 25-35
DRILLING EQUIPMENT:	CME	DEPTH TO WATER AT TIME OF BORING (ft.): 28	CASING (ft.): 0-25
SAMPLING METHOD:	N/A	LOGGED BY:	J. Dennis

DEPTH (feet)	SAMPLES Blows/ Foot	PID Reading	DESCRIPTION (Ground Surface Elevation: N/A)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0			Asphalt	
			Red, orange clay	
5		0.1		
		0.2	White, tan, brown weathered rock	
10		0		
			Red, orange clay with weathered rock (saturated at 24 ft. bgs)	
15		0.3		
20		0		
25			White, pink coarse grain weathered rock	
		0	Red micaceous clay	
		0.3	Red, orange clay with weathered rock	
30		0.4		
35				Boring terminated at 35 ft bgs.
40				

APPENDIX E

Monitoring Well Sampling Forms

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/2/15

Well ID: MW-1 **Field Conditions:** Sun 80F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** N **Condition of surrounding area:** Good

Well depth from TOC: 22.32 **Depth to Water from TOC:** 14.25

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 8.07

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 1.29 **Three Well Volumes (gal):** 3.87

Purging Method: peri pump **Time @ Start of Purge:** 0840

Sample Method: straw, pump **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0905	0.5	-	24.44	4.78	388	0.022	0	4.69	14.56	
0915	1.0	-	24.55	4.71	398	0.020	0	4.71	14.60	
0925	1.5	-	24.90	4.68	404	0.017	0	4.68	15.65	slow pump down
0935	2.0	-	25.79	4.74	415	0.015	0	4.39	15.60	
0945	3.0	-	25.83	4.75	419	0.015	0	4.36	15.61	
0955	4.0	-	25.83	4.74	423	0.015	0	4.32		

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15245-MW-1 Time Collected: 1010

Technician Signature: Sofie A Weber-Snyder

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-2 **Field Conditions:** Sun 80F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 24.81 **Depth to Water from TOC:** 19.37

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 5.44

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.87 **Three Well Volumes (gal):** 2.61

Purging Method: peri pump **Time @ Start of Purge:** 0755

Sample Method: pump, straw **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0801	0.5	—	77.7	4.48	436	0.024	16.8	6.02	18.02	
0811	1.0	—	75.5	5.30	412	0.024	0.93	4.71	18.02	
0825	1.5	—	75.0	5.38	414	0.023	0.00	4.95	18.00	
0840	1.5	—	74.4	5.43	425	0.024	0.00	5.25	18.02	
0847	1.75	—	74.3	5.42	426	0.024	0.00	5.28	18.02	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15246-MW-2 Time Collected: 0850 Technician Signature: Sofia Weber Sharp

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/4/15

Well ID: MW-3 **Field Conditions:** Sun 85F

Sampling Performed By: SWS, AE

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 26.51 **Depth to Water from TOC:** 24.41

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 2.1

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.336 **Three Well Volumes (gal):** 1.00

Purging Method: peri pump **Time @ Start of Purge:** 1125

Sample Method: peri pump, straw **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1135	0.5	—	80.0	4.85	414	0.041	0.0	4.88	24.82	
1140	1.0	—	79.6	4.83	420	0.042	0.0	4.66	25.06	
1145	1.25	—	79.3	4.80	428	0.042	0.0	4.31	25.07	
1150	1.50	—	79.6	4.81	428	0.043	0.0	4.54	25.07	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15247-MW-3 Time Collected: 1155 Technician Signature: Sofia A Weber-Snapp

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/4/25

Well ID: MW-4 **Field Conditions:** Sun 85F

Sampling Performed By: SWS, AE

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 24.64 **Depth to Water from TOC:** 23.25

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 1.39

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.22 **Three Well Volumes (gal):** 0.67

Purging Method: peri pump **Time @ Start of Purge:** 1015

Sample Method: peri pump / straw **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
10:25	0.5	–	73.3	5.20	404	0.029	0.0	3.80	24.09	
10:35	1.0	–	71.6	5.20	415	0.028	0.0	3.21	24.16	
10:45	1.5	–	71.5	5.13	418	0.029	0.0	3.23	24.19	
10:50	1.75	–	71.7	5.14	416	0.030	0.0	3.29	24.18	
10:55	2.0	–	72.0	5.16	414	0.030	0.0	3.46	24.19	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15247-MW-4 Time Collected: 1100 Technician Signature: Sofia L. Weber-Snegg

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/2/15

Well ID: MW-5 **Field Conditions:** Sun 80F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** N **Condition of surrounding area:** Good

Well depth from TOC: 24.88 **Depth to Water from TOC:** 16.80

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 8.08

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 1.29 **Three Well Volumes (gal):** 3.88

Purging Method: peri pump **Time @ Start of Purge:** 0815

Sample Method: straw, pump **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0904	0.5	-	71.6	5.10	450	0.027	4.47	6.62	18.20	
0915	1.0	-	71.4	5.05	456	0.024	9.57	6.49	18.90	
0925	1.5	-	71.4	4.98	465	0.020	25.4	6.25	19.40	can't slow down
0935	2.0	-	72.5	5.05	465	0.022	0	6.53	19.75	pump more
0945	3.0	-	73.2	5.12	462	0.023	0	7.04	19.75	
1006	4.0	-	73.7	5.14	461	0.024	1.78	6.78	20.60	

Temp probe ID: **Ferrous Iron (Fe^{2+})=** **mg/L**

Sample ID: 15245-MW-5 Time Collected: 1010 Technician Signature: [signature]

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/2/15

Well ID: MW-6 **Field Conditions:** Sun 90F

Sampling Performed By: SWJ, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: Y **Well Cap:** Y **Well Locked:** X **Condition of surrounding area:** Good

Well depth from TOC: 24.00 **Depth to Water from TOC:** 19.60

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 4.4

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.704 **Three Well Volumes (gal):** 2.11

Purging Method: peri pump **Time @ Start of Purge:** 1155

Sample Method: pump, straw **Sample Parameters:** VOC, Metal, G

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1205	0.5	-	74.8	5.12	446	0.048	0.0	6.33	19.70	
1215	1.0	-	74.9	5.13	445	0.050	0.0	6.17	19.71	
1225	1.75	-	75.2	5.15	442	0.053	0.0	5.80	19.71	
1235	2.25	-	75.9	5.18	437	0.059	0.0	5.58	19.70	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15245-MW-6 Time Collected: 1240 Technician Signature: Sofia A. Weber-Sragg

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-6D **Field Conditions:** Sun 80F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: Y **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 66.45 **Depth to Water from TOC:** 19.99

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 46.46

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 7.43 **Three Well Volumes (gal):** 22.3

Purging Method: peri pump **Time @ Start of Purge:** 0745

Sample Method: pump, Straw **Sample Parameters:** VOC, Metals, C

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0755	0.5	–	22.96	5.13	320	0.065	2.19	3.85	20.41	
0805	1.0	–	22.54	5.13	330	0.047	0.05	3.52	21.51	Cannot lower pump more
0820	2.0	–	21.97	5.15	354	0.020	0.00	2.97	21.58	
0830	3.0	–	21.95	5.18	355	0.020	0.00	2.94	21.63	
0843	3.5	–	21.90	5.26	366	0.019	0.00	2.91	21.61	
0905	5	–	21.86	5.84	372	0.019	0.00	2.88	21.65	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 1526-MW-6D Time Collected: 0910 Technician Signature: Sofie A. Weber-Snap

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/2/15

Well ID: MW-6DS **Field Conditions:** Sun 90F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: Y **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 43 **Depth to Water from TOC:** 19.19

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 23.81

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 3.81 **Three Well Volumes (gal):** 11.43

Purging Method: peri pump **Time @ Start of Purge:** 1250

Sample Method: pump, straw **Sample Parameters:** VOC, Metal, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1300	0.5	-	75.2	5.47	402	0.018	0.0	5.22	20.19	
1321	1.5	-	74.3	5.53	407	0.018	0.0	5.19	20.20	
1321	2.0	-	74.3	5.53	409	0.018	0.0	5.12	20.20	
1331	2.5	-	75.0	5.54	410	0.018	0.0	5.03	20.20	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15245-MW-6DS

15245-DUP-1 @ 1200

Time Collected: 1335

Technician Signature: Sofie A. Weber-Snyder

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/4/15

Well ID: MW-7 **Field Conditions:** Sun 85F

Sampling Performed By: SWS, AE

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 24.40 **Depth to Water from TOC:** 20.31

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 4.09

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.65 **Three Well Volumes (gal):** 1.96

Purging Method: peri pump **Time @ Start of Purge:** 0900

Sample Method: peri pump, straw **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C/°F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0915	1.0	–	74.0	5.28	383	0.050	0.0	6.78	20.51	
0925	1.5	–	73.9	5.29	390	0.049	0.0	6.39	20.51	
0935	2.0	–	73.7	5.30	406	0.047	0.0	5.68	20.51	
0945	2.5	–	74.4	5.32	419	0.046	0.0	5.21	20.51	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15247-MW-7 Time Collected: 0945 Technician Signature: Sofie A. Weber

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-8 **Field Conditions:** Sun 95F

Sampling Performed By: SWS, BG

Well Construction: Flat

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **General Condition of Well:** Good

Well depth from TOC: 34.74 **Condition of surrounding area:** Good

Well Diameter (in): 2" **Depth to Water from TOC:** 28.51

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 6.23 **Method of measure:**

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.99 **Three Well Volumes (gal):** 2.99

Purging Method: down hole pump **Time @ Start of Purge:** 1615

Sample Method: pump **Sample Parameters:** VOC

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1622	1.0	—	74.8	5.09	323	0.022	0	4.07	29.47	
1632	2.0	—	74.1	5.30	288	0.024	0	3.60	29.73	
1637	3.0	—	74.0	5.43	269	0.025	0	3.24	29.71	
1644	4.0	—	74.9	5.40	277	0.024	0	3.20	29.55	
1652	4.5	—	75.8	5.30	294	0.023	0	3.27	29.48	
1700	5.0	—	76.2	5.15	321	0.022	0	3.35	29.42	
1705	5.25	—	76.2	5.10	338	0.022	0	3.36	29.40	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15246-MW-8 Time Collected: 1710 Technician Signature: Sofia Weber-Sapp

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/2/15

Well ID: MW-9D **Field Conditions:** Sun 90F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** N **Condition of surrounding area:** Good

Well depth from TOC: 67.57 **Depth to Water from TOC:** 20.52

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 47.05

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 7.53 **Three Well Volumes (gal):** 22.6

Purging Method: peri pump **Time @ Start of Purge:** 1100

Sample Method: pump, straw **Sample Parameters:** VOC, metal, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1230	7.50	–	24.91	11.27	37	0.203	0.0	2.29	22.01	
1245	8.50	–	24.92	11.28	37	0.203	0.0	2.39	22.01	
1305	10.00	–	24.99	11.29	37	0.201	0.0	2.54	22.01	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: ~~12~~ SW3 1245 -MW-9D Time Collected: 1310 Technician Signature Sofia A. Weber-Svarz

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/2/15

Well ID: MW-9S **Field Conditions:** Sun 90F

Sampling Performed By: SWS BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** N **Condition of surrounding area:** Good

Well depth from TOC: 25.11 **Depth to Water from TOC:** 20.18

Well Diameter (In): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 4.93

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 0.79 **Three Well Volumes (gal):** 2.34

Purging Method: Peri pump **Time @ Start of Purge:** 1100

Sample Method: straw, pump **Sample Parameters:** Cr, Metal, VOC

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C/°F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1105	0.5	-	76.4	4.99	416	0.095	32.9	6.06	20.25	
1115	1.0	-	75.7	4.91	422	0.096	4.96	6.62	20.25	
1125	1.5	-	74.6	4.86	430	0.097	4.19	6.56	20.25	
1135	2.0	-	74.2	4.82	432	0.100	0	6.98	20.25	
1145	2.5	-	73.9	4.79	432	0.101	0	6.82	20.25	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15245-MW-9S Time Collected: 1150 Technician Signature

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-10 **Field Conditions:** Sun 85F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 39.11 **Depth to Water from TOC:** 29.52

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 9.59

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 1.53 **Three Well Volumes (gal):** 4.60

Purging Method: down hole pump **Time @ Start of Purge:** 1500

Sample Method: pump **Sample Parameters:** VOC, ~~Metals~~ SVOC

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1520	8.0	~~70.1 SWS~~	70.1	4.62	440	0.022	0	18.73	33.71	
1527	10.0	–	70.9	4.72	433	0.023	0	10.45	32.90	
1532	11.0	–	71.8	4.80	419	0.023	0	4.85	32.72	
1538	12.0	–	71.8	4.84	409	0.023	0	4.64	32.72	
1543	13.0	–	71.8	4.86	407	0.023	0	4.60	32.70	

Temp probe ID:

Well was very dirty (brown/red silt)

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15246-MW-10 Time Collected: 1545 Technician Signature Sofie A. Weber-Knapp

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/4/15

Well ID: MW-11 **Field Conditions:** Sun 80F

Sampling Performed By: SWS, AE

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 34.65 **Depth to Water from TOC:** 25.49

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 9.16

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 1.47 **Three Well Volumes (gal):** 4.40

Purging Method: peri pump **Time @ Start of Purge:**

Sample Method: peri pump, straw **Sample Parameters:** VOC, metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0835	4.5	-	24.1	4.18	449	0.08	999	8.29	25.49	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Bayling - pump is not working - No water up.
3 well volume + alot of silt

Sample ID: 15247-MW-11 Time Collected: 0840 Technician Signature Sofia A. Weber-Scott

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-12D **Field Conditions:** Sun 80F

Sampling Performed By: SWS, BG

Well Construction: Flat **General Condition of Well:** Good

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **Condition of surrounding area:** Good

Well depth from TOC: 65.00 **Depth to Water from TOC:** 20.75

Well Diameter (in): 2" **Method of measure:**

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 44.25

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 7.08 **Three Well Volumes (gal):** 21.24

Purging Method: ~~peri pump~~ SWS down hole pump **Time @ Start of Purge:** 0945

Sample Method: ~~pump, straw~~ SWS **Sample Parameters:** VOC, Metal, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C/F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0945	0.5	-	71.8	12.35	187	0.244	0	7.06	22.93	
0955	1.5	-	71.5	12.12	175	0.202	0	6.32	22.45	
1005	2.5	-	71.0	11.58	166	0.126	0	5.47	22.44	
1012	3.5	-	70.8	11.33	170	0.098	5.48	5.71	22.45	
1017	4.25	-	70.8	11.22	171	0.084	4.57	6.01	22.45	
1022	5.0	-	70.8	11.16	172	0.080	3.13	6.12	22.50	
1027	6.0	-	70.8	11.12	172	0.080	2.72	6.20	22.45	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15246-MW-12D Time Collected: 1030 Technician Signature: Sofie A. Weber-Drago

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-13D **Field Conditions:** Inside 80F

Sampling Performed By: SWS, BG

Well Construction: Flat

Well Labeled: N **Well Cap:** Y **Well Locked:** Y **General Condition of Well:** Good

Well depth from TOC: 65.00 **Condition of surrounding area:** Good

Well Diameter (in): 2" **Depth to Water from TOC:** 20.32

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 44.68 **Method of measure:**

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 7.15 **Three Well Volumes (gal):** 21.45

Purging Method: q. down hole pump **Time @ Start of Purge:** 1100

Sample Method: pump **Sample Parameters:** VOC, Metals, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°F)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1110	1.0	–	72.5	11.61	147	0.116	322	3.50	21.49	
1120	2.5	–	71.8	11.16	120	0.089	69.5	3.32	21.50	
1125	3.0	–	71.7	10.95	134	0.082	22.3	3.28	21.45	
1130	4.0	–	71.7	10.70	147	0.075	13.5	3.22	21.45	
1135	5.0	–	71.5	10.60	149	0.073	8.74	3.21	21.51	
1140	6.0	–	71.4	10.56	149	0.071	6.92	3.29	21.52	
1145	7.0	–	71.3	10.53	148	0.070	4.69	3.46	21.59	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15246-MW-13D Time Collected: 1145 Technician Signature: Sofie A. Weber-Sharp

EPS

Monitoring Well Sampling Form

EPS Project: Roper **Date:** 9/3/15

Well ID: MW-14 SW8 **Field Conditions:** Sun 85F

Sampling Performed By: SWS, BG

Well Construction:

Well Labeled: N **Well Cap:** X **Well Locked:** X **General Condition of Well:** Good

Well depth from TOC: 35.00 **Condition of surrounding area:** Good

Well Diameter (in): 2" **Depth to Water from TOC:** 22.20

Height (Ht) of water in well (Well depth from TOC - Static level from TOC): 12.8 **Method of measure:**

Volume of water in well (Ht. x(.16 for 2")(.653 for 4")(1.469 for 6"): 2.05 **Three Well Volumes (gal):** 6.14

Purging Method: down hole pump **Time @ Start of Purge:** 1225

Sample Method: pump **Sample Parameters:** VOC, Metal, Cr

Time	Volume (gal)	Down hole Temp (°C)	Flow Cell Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1235	5.0	~~71.3 SW~~	71.3	6.04	370	0.036	0.0	14.83	22.64	
1240	6.0	—	70.7	5.54	363	0.036	0.0	7.35	22.54	
1245	7.0	—	70.2	5.15	357	0.035	0.0	4.65	22.52	
1250	7.5	—	70.4	5.14	362	0.036	0.0	3.66	22.51	
1255	8	—	70.6	5.13	364	0.035	0.0	1.28→3.65	22.50	
~~1305~~	9	—	70.7	5.13	363	0.035	0	3.63	22.51	

Temp probe ID:

Ferrous Iron (Fe^{2+})= mg/L

Sample ID: 15246-MW-14 SW8 Time Collected: 1310 Technician Signature Sofie Weber-Snapp

APPENDIX F

Laboratory Analytical Reports

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

September 15, 2015

Justin Vickery
Environmental Planning Specialists, Inc.
1050 Crown Pointe Parkway
Atlanta GA 30338

TEL: (404) 315-9113
FAX: (404) 315-8509

RE: Roper

Dear Justin Vickery: Order No: 1509538

Analytical Environmental Services, Inc. received 20 samples on 9/4/2015 4:30:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/15-06/30/16.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

CRKanhai

Chantelle Kanhai
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1509538

Date: 9/2/15 Page 1 of 2

COMPANY: EPS	ADDRESS: 1050 Crown Pointe Pkwy. Suite 550 Atlanta, GA 30338
PHONE: 404-315-9113	FAX: 404-315-8509
SAMPLED BY: Sofie Weber-Snapp	SIGNATURE: Sofie A. Weber-Snapp

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	ANALYSIS REQUESTED: VOC	Metal ICP, Hg	PRESERVATION (See codes): HCl	H2SO4	REMARKS	No # of Containers
1	15245-MW-1	9/2/15	1000	X		GW	X	X				
2	15245-MW-5	9/2/15	1010	X		GW	X	X				
3	15245-MW-9S	9/2/15	1150	X		GW	X	X				
4	15245-MW-9D	9/2/15	1310	X		GW	X	X				
5	15245-MW-6	9/2/15	1240	X		GW	X	X				
6	15245-MW-6DS	9/2/15	1335	X		GW	X	X				
7	15245-DUP-1	9/2/15	1200	X		GW	X	X				
8	15246-MW-6D	9/3/15	0910	X		GW	X	X				
9	15246-MW-2	9/3/15	0850	X		GW	X	X				
10	15246-MW-12D	9/3/15	1030	X		GW	X	X				
11	15246-MW-13D	9/3/15	1145	X		GW	X	X				
12	15246-MW-4	9/3/15	1310	X		GW	X	X				
13	RINSATE	9/3/15	1320	X		GW	X	X				
14	15246-MW-10	9/3/15	1545	X		GW	X					

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Sofie A. Weber-Snapp	9/4/15 1630	1: Tanya Delis	9/4/15 1630
2:		2:	
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER_____

PROJECT INFORMATION
PROJECT NAME: Roper
PROJECT #:
SITE ADDRESS:
SEND REPORT TO:
INVOICE TO:
(IF DIFFERENT FROM ABOVE)
QUOTE #:_____ PO#:_____

RECEIPT
Total # of Containers

Turnaround Time Request
- (X) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush **(auth req.)**
- ( ) Other _____

STATE PROGRAM (if any): _____
E-mail? (Y)/N; Fax? Y/N
DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1509538

Date: 9/3/15 Page 2 of 2

COMPANY: EPS

ADDRESS: 1050 Crown Pointe Pkwy Suite 550 Atlanta, GA 30338

PHONE: 404-315-9113

FAX: 404-315-8509

SAMPLED BY: Sofie Weber-Snapp

SIGNATURE: Sofie A Weber-Snapp

ANALYSIS REQUESTED

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes) AT	NZ	VOC	Metal ICP, Hg	REMARKS
1	Trip Blank	9/3/15		X		W	X				
2	15246-MW-8	9/3/15	1710	X		GW	X				
3	15247-MW-11	9/4/15	0840	X		GW	X	X			
4	15247-MW-7	9/4/15	0945	X		GW	X	X			
5	15247-MW-4	9/4/15	1100	X		GW	X	X			
6	15247-MW-3	9/4/15	1155	X		GW	X	X			
7											
8											
9											
10											
11											
12											
13											
14											

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

No # of Containers

RELINQUISHED BY / DATE/TIME
1: Sofie A Weber-Snapp 9/4/15 16:30
2:
3:

RECEIVED BY / DATE/TIME
1: Tanya Sebas 9/4/15 1630
2:
3:

PROJECT INFORMATION
PROJECT NAME: Roper
PROJECT #:
SITE ADDRESS:
SEND REPORT TO:
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT
Total # of Containers

Turnaround Time Request
- (X) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush (auth. req.)
- ( ) Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 15-Sep-15

Client: Environmental Planning Specialists, Inc.
Project: Roper
Lab ID: 1509538

Case Narrative

Per Justin Vickery on 9/8/15 via email, the metals sample for "15247-MW-11" was not analyzed.

Volatiles Organic Compounds Analysis by Method 8260B:

Due to sample matrix, sample 1509538-018 required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc

Date: 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-1
Project Name:	Roper	**Collection Date:**	9/2/2015 10:00:00 AM
Lab ID:	1509538-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 19:06	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 19:06	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 19:06	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 19:06	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 19:06	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 19:06	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 19:06	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 19:06	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-1
Project Name:	Roper	**Collection Date:**	9/2/2015 10:00:00 AM
Lab ID:	1509538-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Trichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:06	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 19:06	CH
Surr: 4-Bromofluorobenzene	93.6	70.6-123		%REC	212565	1	09/10/2015 19:06	CH
Surr: Dibromofluoromethane	84.5	78.7-124		%REC	212565	1	09/10/2015 19:06	CH
Surr: Toluene-d8	87.2	81.3-120		%REC	212565	1	09/10/2015 19:06	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 17:41	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:36	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:36	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:36	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:36	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-5
Project Name:	Roper	**Collection Date:**	9/2/2015 10:10:00 AM
Lab ID:	1509538-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 19:30	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 19:30	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 19:30	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 19:30	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 19:30	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 19:30	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 19:30	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 19:30	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-5
Project Name:	Roper	**Collection Date:**	9/2/2015 10:10:00 AM
Lab ID:	1509538-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Trichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:30	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 19:30	CH
Surr: 4-Bromofluorobenzene	92.1	70.6-123		%REC	212565	1	09/10/2015 19:30	CH
Surr: Dibromofluoromethane	81.9	78.7-124		%REC	212565	1	09/10/2015 19:30	CH
Surr: Toluene-d8	86.6	81.3-120		%REC	212565	1	09/10/2015 19:30	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:00	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:16	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:16	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:16	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:16	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-9S
Project Name:	Roper	**Collection Date:**	9/2/2015 11:50:00 AM
Lab ID:	1509538-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,1,2-Trichloroethane	10	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 05:31	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 05:31	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 05:31	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 05:31	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 05:31	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 05:31	CH
cis-1,2-Dichloroethene	260	50		ug/L	212565	10	09/11/2015 05:55	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 05:31	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 05:31	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-9S
Project Name:	Roper	**Collection Date:**	9/2/2015 11:50:00 AM
Lab ID:	1509538-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Tetrachloroethene	490	50		ug/L	212565	10	09/11/2015 05:55	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Trichloroethene	540	50		ug/L	212565	10	09/11/2015 05:55	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 05:31	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 05:31	CH
Surr: 4-Bromofluorobenzene	84.7	70.6-123		%REC	212565	1	09/11/2015 05:31	CH
Surr: 4-Bromofluorobenzene	91.7	70.6-123		%REC	212565	10	09/11/2015 05:55	CH
Surr: Dibromofluoromethane	87.7	78.7-124		%REC	212565	1	09/11/2015 05:31	CH
Surr: Dibromofluoromethane	87.9	78.7-124		%REC	212565	10	09/11/2015 05:55	CH
Surr: Toluene-d8	88.4	81.3-120		%REC	212565	10	09/11/2015 05:55	CH
Surr: Toluene-d8	90.5	81.3-120		%REC	212565	1	09/11/2015 05:31	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	0.00029	0.00020		mg/L	212563	1	09/10/2015 10:43	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:39	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:39	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:39	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:39	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-9D
Project Name:	Roper	**Collection Date:**	9/2/2015 1:10:00 PM
Lab ID:	1509538-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 19:53	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 19:53	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 19:53	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 19:53	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 19:53	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 19:53	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 19:53	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 19:53	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-9D
Project Name:	Roper	**Collection Date:**	9/2/2015 1:10:00 PM
Lab ID:	1509538-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Tetrachloroethene	7.1	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Trichloroethene	31	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 19:53	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 19:53	CH
Surr: 4-Bromofluorobenzene	92.8	70.6-123		%REC	212565	1	09/10/2015 19:53	CH
Surr: Dibromofluoromethane	84.2	78.7-124		%REC	212565	1	09/10/2015 19:53	CH
Surr: Toluene-d8	89.6	81.3-120		%REC	212565	1	09/10/2015 19:53	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:04	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:42	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:42	TA
Chromium	0.0791	0.0100		mg/L	212799	1	09/14/2015 15:42	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:42	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-6
Project Name:	Roper	**Collection Date:**	9/2/2015 12:40:00 PM
Lab ID:	1509538-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 20:17	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 20:17	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 20:17	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 20:17	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 20:17	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 20:17	CH
cis-1,2-Dichloroethene	110	5.0		ug/L	212565	1	09/10/2015 20:17	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 20:17	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 20:17	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-6
Project Name:	Roper	**Collection Date:**	9/2/2015 12:40:00 PM
Lab ID:	1509538-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Tetrachloroethene	120	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Trichloroethene	40	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:17	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 20:17	CH
Surr: 4-Bromofluorobenzene	96.8	70.6-123		%REC	212565	1	09/10/2015 20:17	CH
Surr: Dibromofluoromethane	84.7	78.7-124		%REC	212565	1	09/10/2015 20:17	CH
Surr: Toluene-d8	89.1	81.3-120		%REC	212565	1	09/10/2015 20:17	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:06	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:45	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:45	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:45	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:45	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-6DS
Project Name:	Roper	**Collection Date:**	9/2/2015 1:35:00 PM
Lab ID:	1509538-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 20:40	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 20:40	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 20:40	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 20:40	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 20:40	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 20:40	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 20:40	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 20:40	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-MW-6DS
Project Name:	Roper	**Collection Date:**	9/2/2015 1:35:00 PM
Lab ID:	1509538-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Tetrachloroethene	16	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Trichloroethene	30	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 20:40	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 20:40	CH
Surr: 4-Bromofluorobenzene	91.2	70.6-123		%REC	212565	1	09/10/2015 20:40	CH
Surr: Dibromofluoromethane	89.4	78.7-124		%REC	212565	1	09/10/2015 20:40	CH
Surr: Toluene-d8	88.5	81.3-120		%REC	212565	1	09/10/2015 20:40	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:14	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:48	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:48	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:48	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:48	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-DUP-1
Project Name:	Roper	**Collection Date:**	9/2/2015 12:00:00 PM
Lab ID:	1509538-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
2-Butanone	BRL	50		ug/L	212565	1	09/14/2015 15:43	AR
2-Hexanone	BRL	10		ug/L	212565	1	09/14/2015 15:43	AR
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/14/2015 15:43	AR
Acetone	BRL	50		ug/L	212565	1	09/14/2015 15:43	AR
Benzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Bromoform	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Bromomethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Chloroethane	BRL	10		ug/L	212565	1	09/14/2015 15:43	AR
Chloroform	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Chloromethane	BRL	10		ug/L	212565	1	09/14/2015 15:43	AR
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Cyclohexane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/14/2015 15:43	AR
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Freon-113	BRL	10		ug/L	212565	1	09/14/2015 15:43	AR
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Methyl acetate	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Methylene chloride	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
o-Xylene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15245-DUP-1
Project Name:	Roper	**Collection Date:**	9/2/2015 12:00:00 PM
Lab ID:	1509538-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Tetrachloroethene	18	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Toluene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Trichloroethene	24	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/14/2015 15:43	AR
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/14/2015 15:43	AR
Surr: 4-Bromofluorobenzene	73.3	70.6-123		%REC	212565	1	09/14/2015 15:43	AR
Surr: Dibromofluoromethane	103	78.7-124		%REC	212565	1	09/14/2015 15:43	AR
Surr: Toluene-d8	90	81.3-120		%REC	212565	1	09/14/2015 15:43	AR
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:16	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:51	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:51	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:51	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:51	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-6D
Project Name:	Roper	**Collection Date:**	9/3/2015 9:10:00 AM
Lab ID:	1509538-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 21:04	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 21:04	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 21:04	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 21:04	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 21:04	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 21:04	CH
cis-1,2-Dichloroethene	20	5.0		ug/L	212565	1	09/10/2015 21:04	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 21:04	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 21:04	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-6D
Project Name:	Roper	**Collection Date:**	9/3/2015 9:10:00 AM
Lab ID:	1509538-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Tetrachloroethene	110	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Trichloroethene	210	50		ug/L	212565	10	09/11/2015 15:12	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:04	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 21:04	CH
Surr: 4-Bromofluorobenzene	91.5	70.6-123		%REC	212565	10	09/11/2015 15:12	CH
Surr: 4-Bromofluorobenzene	92.5	70.6-123		%REC	212565	1	09/10/2015 21:04	CH
Surr: Dibromofluoromethane	86.4	78.7-124		%REC	212565	10	09/11/2015 15:12	CH
Surr: Dibromofluoromethane	89.3	78.7-124		%REC	212565	1	09/10/2015 21:04	CH
Surr: Toluene-d8	85.5	81.3-120		%REC	212565	1	09/10/2015 21:04	CH
Surr: Toluene-d8	89.1	81.3-120		%REC	212565	10	09/11/2015 15:12	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:17	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:54	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:54	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:54	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:54	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-2
Project Name:	Roper	**Collection Date:**	9/3/2015 8:50:00 AM
Lab ID:	1509538-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
2-Butanone	BRL	50		ug/L	212565	1	09/10/2015 21:28	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/10/2015 21:28	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/10/2015 21:28	CH
Acetone	BRL	50		ug/L	212565	1	09/10/2015 21:28	CH
Benzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Chloroethane	BRL	10		ug/L	212565	1	09/10/2015 21:28	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Chloromethane	BRL	10		ug/L	212565	1	09/10/2015 21:28	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/10/2015 21:28	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Freon-113	BRL	10		ug/L	212565	1	09/10/2015 21:28	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-2
Project Name:	Roper	**Collection Date:**	9/3/2015 8:50:00 AM
Lab ID:	1509538-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Toluene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Trichloroethene	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/10/2015 21:28	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/10/2015 21:28	CH
Surr: 4-Bromofluorobenzene	95.7	70.6-123		%REC	212565	1	09/10/2015 21:28	CH
Surr: Dibromofluoromethane	87.1	78.7-124		%REC	212565	1	09/10/2015 21:28	CH
Surr: Toluene-d8	86.7	81.3-120		%REC	212565	1	09/10/2015 21:28	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:19	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 15:57	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 15:57	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 15:57	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 15:57	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-12D
Project Name:	Roper	**Collection Date:**	9/3/2015 10:30:00 AM
Lab ID:	1509538-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 23:15	AR
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 23:15	AR
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 23:15	AR
Acetone	BRL	50		ug/L	212565	1	09/11/2015 23:15	AR
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 23:15	AR
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 23:15	AR
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 23:15	AR
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 23:15	AR
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-12D
Project Name:	Roper	**Collection Date:**	9/3/2015 10:30:00 AM
Lab ID:	1509538-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Tetrachloroethene	33	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Trichloroethene	120	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 23:15	AR
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 23:15	AR
Surr: 4-Bromofluorobenzene	89.9	70.6-123		%REC	212565	1	09/11/2015 23:15	AR
Surr: Dibromofluoromethane	89.8	78.7-124		%REC	212565	1	09/11/2015 23:15	AR
Surr: Toluene-d8	90.7	81.3-120		%REC	212565	1	09/11/2015 23:15	AR
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:21	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:00	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:00	TA
Chromium	0.0176	0.0100		mg/L	212799	1	09/14/2015 16:00	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:00	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-13D
Project Name:	Roper	**Collection Date:**	9/3/2015 11:45:00 AM
Lab ID:	1509538-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 08:42	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 08:42	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 08:42	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 08:42	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 08:42	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 08:42	CH
cis-1,2-Dichloroethene	5.5	5.0		ug/L	212565	1	09/11/2015 08:42	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 08:42	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 08:42	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-13D
Project Name:	Roper	**Collection Date:**	9/3/2015 11:45:00 AM
Lab ID:	1509538-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Tetrachloroethene	140	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Trichloroethene	770	50		ug/L	212565	10	09/11/2015 22:28	AR
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 08:42	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 08:42	CH
Surr: 4-Bromofluorobenzene	90.4	70.6-123		%REC	212565	1	09/11/2015 08:42	CH
Surr: 4-Bromofluorobenzene	92.2	70.6-123		%REC	212565	10	09/11/2015 22:28	AR
Surr: Dibromofluoromethane	91.7	78.7-124		%REC	212565	1	09/11/2015 08:42	CH
Surr: Dibromofluoromethane	90.6	78.7-124		%REC	212565	10	09/11/2015 22:28	AR
Surr: Toluene-d8	89.2	81.3-120		%REC	212565	1	09/11/2015 08:42	CH
Surr: Toluene-d8	89.7	81.3-120		%REC	212565	10	09/11/2015 22:28	AR
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:23	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:09	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:09	TA
Chromium	0.0377	0.0100		mg/L	212799	1	09/14/2015 16:09	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:09	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-14
Project Name:	Roper	**Collection Date:**	9/3/2015 1:10:00 PM
Lab ID:	1509538-012	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 14:00	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 14:00	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 14:00	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 14:00	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 14:00	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 14:00	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 14:00	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 14:00	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-14
Project Name:	Roper	**Collection Date:**	9/3/2015 1:10:00 PM
Lab ID:	1509538-012	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Trichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 14:00	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 14:00	CH
Surr: 4-Bromofluorobenzene	98.3	70.6-123		%REC	212565	1	09/11/2015 14:00	CH
Surr: Dibromofluoromethane	90.4	78.7-124		%REC	212565	1	09/11/2015 14:00	CH
Surr: Toluene-d8	89.7	81.3-120		%REC	212565	1	09/11/2015 14:00	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:25	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:12	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:12	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 16:12	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:12	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	RINSATE
Project Name:	Roper	**Collection Date:**	9/3/2015 1:20:00 PM
Lab ID:	1509538-013	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 22:51	AR
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 22:51	AR
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 22:51	AR
Acetone	BRL	50		ug/L	212565	1	09/11/2015 22:51	AR
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 22:51	AR
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 22:51	AR
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 22:51	AR
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 22:51	AR
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	RINSATE
Project Name:	Roper	**Collection Date:**	9/3/2015 1:20:00 PM
Lab ID:	1509538-013	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Trichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 22:51	AR
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 22:51	AR
Surr: 4-Bromofluorobenzene	90.4	70.6-123		%REC	212565	1	09/11/2015 22:51	AR
Surr: Dibromofluoromethane	92.7	78.7-124		%REC	212565	1	09/11/2015 22:51	AR
Surr: Toluene-d8	90.4	81.3-120		%REC	212565	1	09/11/2015 22:51	AR
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:27	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:14	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:14	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 16:14	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:14	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-10
Project Name:	Roper	**Collection Date:**	9/3/2015 3:45:00 PM
Lab ID:	1509538-014	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 07:54	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 07:54	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 07:54	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 07:54	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 07:54	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 07:54	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 07:54	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 07:54	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-10
Project Name:	Roper	**Collection Date:**	9/3/2015 3:45:00 PM
Lab ID:	1509538-014	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Trichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:54	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 07:54	CH
Surr: 4-Bromofluorobenzene	90.2	70.6-123		%REC	212565	1	09/11/2015 07:54	CH
Surr: Dibromofluoromethane	96.9	78.7-124		%REC	212565	1	09/11/2015 07:54	CH
Surr: Toluene-d8	92.3	81.3-120		%REC	212565	1	09/11/2015 07:54	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Roper	**Collection Date:**	9/3/2015
Lab ID:	1509538-015	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 02:22	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 02:22	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 02:22	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 02:22	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 02:22	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 02:22	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 02:22	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 02:22	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Roper	**Collection Date:**	9/3/2015
Lab ID:	1509538-015	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Tetrachloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Trichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 02:22	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 02:22	CH
Surr: 4-Bromofluorobenzene	91.2	70.6-123		%REC	212565	1	09/11/2015 02:22	CH
Surr: Dibromofluoromethane	90.5	78.7-124		%REC	212565	1	09/11/2015 02:22	CH
Surr: Toluene-d8	89.3	81.3-120		%REC	212565	1	09/11/2015 02:22	CH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-8
Project Name:	Roper	**Collection Date:**	9/3/2015 5:10:00 PM
Lab ID:	1509538-016	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 07:06	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 07:06	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 07:06	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 07:06	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 07:06	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 07:06	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 07:06	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 07:06	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15246-MW-8
Project Name:	Roper	**Collection Date:**	9/3/2015 5:10:00 PM
Lab ID:	1509538-016	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Tetrachloroethene	70	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Trichloroethene	9.6	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:06	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 07:06	CH
Surr: 4-Bromofluorobenzene	90	70.6-123		%REC	212565	1	09/11/2015 07:06	CH
Surr: Dibromofluoromethane	89.3	78.7-124		%REC	212565	1	09/11/2015 07:06	CH
Surr: Toluene-d8	88.5	81.3-120		%REC	212565	1	09/11/2015 07:06	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-11
Project Name:	Roper	**Collection Date:**	9/4/2015 8:40:00 AM
Lab ID:	1509538-017	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 07:30	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 07:30	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 07:30	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 07:30	CH
Benzene	43	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 07:30	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 07:30	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 07:30	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 07:30	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-11
Project Name:	Roper	**Collection Date:**	9/4/2015 8:40:00 AM
Lab ID:	1509538-017	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Tetrachloroethene	97	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Trichloroethene	55	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 07:30	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 07:30	CH
Surr: 4-Bromofluorobenzene	90.3	70.6-123		%REC	212565	1	09/11/2015 07:30	CH
Surr: Dibromofluoromethane	94.2	78.7-124		%REC	212565	1	09/11/2015 07:30	CH
Surr: Toluene-d8	91.8	81.3-120		%REC	212565	1	09/11/2015 07:30	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-7
Project Name:	Roper	**Collection Date:**	9/4/2015 9:45:00 AM
Lab ID:	1509538-018	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,1,2,2-Tetrachloroethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,1,2-Trichloroethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,1-Dichloroethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,1-Dichloroethene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,2,4-Trichlorobenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,2-Dibromo-3-chloropropane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,2-Dibromoethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,2-Dichlorobenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,2-Dichloroethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,2-Dichloropropane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,3-Dichlorobenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
1,4-Dichlorobenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
2-Butanone	BRL	5000		ug/L	212565	100	09/09/2015 01:30	TH
2-Hexanone	BRL	1000		ug/L	212565	100	09/09/2015 01:30	TH
4-Methyl-2-pentanone	BRL	1000		ug/L	212565	100	09/09/2015 01:30	TH
Acetone	BRL	5000		ug/L	212565	100	09/09/2015 01:30	TH
Benzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Bromodichloromethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Bromoform	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Bromomethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Carbon disulfide	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Carbon tetrachloride	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Chlorobenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Chloroethane	BRL	1000		ug/L	212565	100	09/09/2015 01:30	TH
Chloroform	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Chloromethane	BRL	1000		ug/L	212565	100	09/09/2015 01:30	TH
cis-1,2-Dichloroethene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
cis-1,3-Dichloropropene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Cyclohexane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Dibromochloromethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Dichlorodifluoromethane	BRL	1000		ug/L	212565	100	09/09/2015 01:30	TH
Ethylbenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Freon-113	BRL	1000		ug/L	212565	100	09/09/2015 01:30	TH
Isopropylbenzene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
m,p-Xylene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Methyl acetate	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Methyl tert-butyl ether	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Methylcyclohexane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Methylene chloride	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
o-Xylene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-7
Project Name:	Roper	**Collection Date:**	9/4/2015 9:45:00 AM
Lab ID:	1509538-018	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Tetrachloroethene	16000	500		ug/L	212565	100	09/09/2015 01:30	TH
Toluene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
trans-1,2-Dichloroethene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
trans-1,3-Dichloropropene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Trichloroethene	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Trichlorofluoromethane	BRL	500		ug/L	212565	100	09/09/2015 01:30	TH
Vinyl chloride	BRL	200		ug/L	212565	100	09/09/2015 01:30	TH
Surr: 4-Bromofluorobenzene	81.7	70.6-123		%REC	212565	100	09/09/2015 01:30	TH
Surr: Dibromofluoromethane	103	78.7-124		%REC	212565	100	09/09/2015 01:30	TH
Surr: Toluene-d8	95.3	81.3-120		%REC	212565	100	09/09/2015 01:30	TH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:29	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:17	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:17	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 16:17	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:17	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-4
Project Name:	Roper	**Collection Date:**	9/4/2015 11:00:00 AM
Lab ID:	1509538-019	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 06:19	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 06:19	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 06:19	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 06:19	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 06:19	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 06:19	CH
cis-1,2-Dichloroethene	11	5.0		ug/L	212565	1	09/11/2015 06:19	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 06:19	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 06:19	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-4
Project Name:	Roper	**Collection Date:**	9/4/2015 11:00:00 AM
Lab ID:	1509538-019	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Tetrachloroethene	130	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Trichloroethene	98	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:19	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 06:19	CH
Surr: 4-Bromofluorobenzene	89.2	70.6-123		%REC	212565	1	09/11/2015 06:19	CH
Surr: Dibromofluoromethane	91.9	78.7-124		%REC	212565	1	09/11/2015 06:19	CH
Surr: Toluene-d8	92.1	81.3-120		%REC	212565	1	09/11/2015 06:19	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:31	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:20	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:20	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 16:20	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:20	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-3
Project Name:	Roper	**Collection Date:**	9/4/2015 11:55:00 AM
Lab ID:	1509538-020	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,1,2-Trichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,1-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,1-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,2-Dibromoethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,2-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,2-Dichloroethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,2-Dichloropropane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,3-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
1,4-Dichlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
2-Butanone	BRL	50		ug/L	212565	1	09/11/2015 06:43	CH
2-Hexanone	BRL	10		ug/L	212565	1	09/11/2015 06:43	CH
4-Methyl-2-pentanone	BRL	10		ug/L	212565	1	09/11/2015 06:43	CH
Acetone	BRL	50		ug/L	212565	1	09/11/2015 06:43	CH
Benzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Bromodichloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Bromoform	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Bromomethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Carbon disulfide	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Carbon tetrachloride	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Chlorobenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Chloroethane	BRL	10		ug/L	212565	1	09/11/2015 06:43	CH
Chloroform	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Chloromethane	BRL	10		ug/L	212565	1	09/11/2015 06:43	CH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Cyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Dibromochloromethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Dichlorodifluoromethane	BRL	10		ug/L	212565	1	09/11/2015 06:43	CH
Ethylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Freon-113	BRL	10		ug/L	212565	1	09/11/2015 06:43	CH
Isopropylbenzene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
m,p-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Methyl acetate	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Methyl tert-butyl ether	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Methylcyclohexane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Methylene chloride	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
o-Xylene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 15-Sep-15

Client:	Environmental Planning Specialists, Inc.	**Client Sample ID:**	15247-MW-3
Project Name:	Roper	**Collection Date:**	9/4/2015 11:55:00 AM
Lab ID:	1509538-020	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Tetrachloroethene	10	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Toluene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Trichloroethene	50	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Trichlorofluoromethane	BRL	5.0		ug/L	212565	1	09/11/2015 06:43	CH
Vinyl chloride	BRL	2.0		ug/L	212565	1	09/11/2015 06:43	CH
Surr: 4-Bromofluorobenzene	91.2	70.6-123		%REC	212565	1	09/11/2015 06:43	CH
Surr: Dibromofluoromethane	90.6	78.7-124		%REC	212565	1	09/11/2015 06:43	CH
Surr: Toluene-d8	88.4	81.3-120		%REC	212565	1	09/11/2015 06:43	CH
Mercury, Total SW7470A				**(SW7470A)**				
Mercury	BRL	0.00020		mg/L	212563	1	09/09/2015 18:39	TA
METALS, TOTAL SW6010C				**(SW3010A)**				
Arsenic	BRL	0.0500		mg/L	212799	1	09/14/2015 16:23	TA
Cadmium	BRL	0.0050		mg/L	212799	1	09/14/2015 16:23	TA
Chromium	BRL	0.0100		mg/L	212799	1	09/14/2015 16:23	TA
Lead	BRL	0.0100		mg/L	212799	1	09/14/2015 16:23	TA

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EPS Work Order Number 1509538

Checklist completed by Katie Fawn 9/4/15
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 3.1 Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by KF

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212563

Sample ID: **MB-212563**	Client ID:			Units: **mg/L**	Prep Date: **09/09/2015**	Run No: **299630**
SampleType: **MBLK**	TestCode: **Mercury, Total SW7470A**			BatchID: **212563**	Analysis Date: **09/09/2015**	Seq No: **6399606**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	BRL	0.00020									

Sample ID: **LCS-212563**	Client ID:			Units: **mg/L**	Prep Date: **09/09/2015**	Run No: **299630**
SampleType: **LCS**	TestCode: **Mercury, Total SW7470A**			BatchID: **212563**	Analysis Date: **09/09/2015**	Seq No: **6399607**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004450	0.00020	0.0050		89.0	80	120				

Sample ID: **1509538-001BMS**	Client ID: **15245-MW-1**			Units: **mg/L**	Prep Date: **09/09/2015**	Run No: **299630**
SampleType: **MS**	TestCode: **Mercury, Total SW7470A**			BatchID: **212563**	Analysis Date: **09/09/2015**	Seq No: **6399612**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004182	0.00020	0.0050		83.6	70	130				

Sample ID: **1509538-001BMSD**	Client ID: **15245-MW-1**			Units: **mg/L**	Prep Date: **09/09/2015**	Run No: **299630**
SampleType: **MSD**	TestCode: **Mercury, Total SW7470A**			BatchID: **212563**	Analysis Date: **09/09/2015**	Seq No: **6399613**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004756	0.00020	0.0050		95.1	70	130	0.004182	12.8	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212565

Sample ID: **MB-212565**	Client ID:		Units: **ug/L**	Prep Date: **09/08/2015**	Run No: **299527**
SampleType: **MBLK**	TestCode: **TCL VOLATILE ORGANICS SW8260B**		BatchID: **212565**	Analysis Date: **09/08/2015**	Seq No: **6397030**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212565

Sample ID: **MB-212565** Client ID: Units: **ug/L** Prep Date: **09/08/2015** Run No: **299527**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **212565** Analysis Date: **09/08/2015** Seq No: **6397030**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	41.47	0	50.00		82.9	70.6	123				
Surr: Dibromofluoromethane	52.34	0	50.00		105	78.7	124				
Surr: Toluene-d8	48.41	0	50.00		96.8	81.3	120				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212565

Sample ID: **LCS-212565** Client ID: Units: **ug/L** Prep Date: **09/08/2015** Run No: **299527**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **212565** Analysis Date: **09/08/2015** Seq No: **6397029**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	52.48	5.0	50.00		105	64.2	137				
Benzene	47.22	5.0	50.00		94.4	72.8	128				
Chlorobenzene	48.41	5.0	50.00		96.8	72.3	126				
Toluene	47.31	5.0	50.00		94.6	74.9	127				
Trichloroethene	48.18	5.0	50.00		96.4	70.5	134				
Surr: 4-Bromofluorobenzene	42.26	0	50.00		84.5	70.6	123				
Surr: Dibromofluoromethane	50.62	0	50.00		101	78.7	124				
Surr: Toluene-d8	46.01	0	50.00		92.0	81.3	120				

Sample ID: **1509538-018AMS** Client ID: **15247-MW-7** Units: **ug/L** Prep Date: **09/08/2015** Run No: **299619**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **212565** Analysis Date: **09/09/2015** Seq No: **6399398**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	4796	500	5000		95.9	60.5	156				
Benzene	5262	500	5000		105	70	135				
Chlorobenzene	5047	500	5000		101	70.5	132				
Toluene	5209	500	5000		104	70.5	137				
Trichloroethene	5556	500	5000	133.0	108	71.8	139				
Surr: 4-Bromofluorobenzene	4378	0	5000		87.6	70.6	123				
Surr: Dibromofluoromethane	4367	0	5000		87.3	78.7	124				
Surr: Toluene-d8	4481	0	5000		89.6	81.3	120				

Sample ID: **1509538-018AMSD** Client ID: **15247-MW-7** Units: **ug/L** Prep Date: **09/08/2015** Run No: **299619**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **212565** Analysis Date: **09/09/2015** Seq No: **6399399**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	4358	500	5000		87.2	60.5	156	4796	9.57	20	
Benzene	5404	500	5000		108	70	135	5262	2.66	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212565

Sample ID: **1509538-018AMSD** Client ID: **15247-MW-7** Units: **ug/L** Prep Date: **09/08/2015** Run No: **299619**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **212565** Analysis Date: **09/09/2015** Seq No: **6399399**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	5010	500	5000		100	70.5	132	5047	0.736	20	
Toluene	5293	500	5000		106	70.5	137	5209	1.60	20	
Trichloroethene	5370	500	5000	133.0	105	71.8	139	5556	3.40	20	
Surr: 4-Bromofluorobenzene	4465	0	5000		89.3	70.6	123	4378	0	0	
Surr: Dibromofluoromethane	4901	0	5000		98.0	78.7	124	4367	0	0	
Surr: Toluene-d8	4719	0	5000		94.4	81.3	120	4481	0	0	

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212799

Sample ID: **MB-212799**	Client ID:			Units: **mg/L**	Prep Date: **09/11/2015**	Run No: **299909**
SampleType: **MBLK**	TestCode: **METALS, TOTAL** **SW6010C**			BatchID: **212799**	Analysis Date: **09/14/2015**	Seq No: **6407644**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	0.0500									
Cadmium	BRL	0.0050									
Chromium	BRL	0.0100									
Lead	BRL	0.0100									

Sample ID: **LCS-212799**	Client ID:			Units: **mg/L**	Prep Date: **09/11/2015**	Run No: **299909**
SampleType: **LCS**	TestCode: **METALS, TOTAL** **SW6010C**			BatchID: **212799**	Analysis Date: **09/14/2015**	Seq No: **6407645**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	1.045	0.0500	1.000		104	80	120				
Cadmium	1.037	0.0050	1.000		104	80	120				
Chromium	1.007	0.0100	1.000		101	80	120				
Lead	1.042	0.0100	1.000		104	80	120				

Sample ID: **1509538-002BMS**	Client ID: **15245-MW-5**			Units: **mg/L**	Prep Date: **09/11/2015**	Run No: **299909**
SampleType: **MS**	TestCode: **METALS, TOTAL** **SW6010C**			BatchID: **212799**	Analysis Date: **09/14/2015**	Seq No: **6407647**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	1.099	0.0500	1.000		110	75	125				
Cadmium	1.093	0.0050	1.000		109	75	125				
Chromium	1.098	0.0100	1.000	0.0004100	110	75	125				
Lead	1.097	0.0100	1.000		110	75	125				

Sample ID: **1509538-002BMSD**	Client ID: **15245-MW-5**			Units: **mg/L**	Prep Date: **09/11/2015**	Run No: **299909**
SampleType: **MSD**	TestCode: **METALS, TOTAL** **SW6010C**			BatchID: **212799**	Analysis Date: **09/14/2015**	Seq No: **6407648**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	1.061	0.0500	1.000		106	75	125	1.099	3.49	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Environmental Planning Specialists, Inc.
Project Name: Roper
Workorder: 1509538

ANALYTICAL QC SUMMARY REPORT

BatchID: 212799

Sample ID: **1509538-002BMSD** Client ID: **15245-MW-5** Units: **mg/L** Prep Date: **09/11/2015** Run No: **299909**
SampleType: **MSD** TestCode: **METALS, TOTAL SW6010C** BatchID: **212799** Analysis Date: **09/14/2015** Seq No: **6407648**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Cadmium	1.051	0.0050	1.000		105	75	125	1.093	3.93	20	
Chromium	1.055	0.0100	1.000	0.0004100	105	75	125	1.098	3.99	20	
Lead	1.054	0.0100	1.000		105	75	125	1.097	4.06	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ALS Environmental
ALS Group USA, Corp
1565 Jefferson Rd, Building 300, Suite 360
Rochester, NY 14623
T: 585-288-5380
F: 585-288-8475
www.alsglobal.com

September 30, 2015

Analytical Report for Service Request No: R1507363

Justin Vickery
Environmental Planning Specialists
1050 Crown Pointe Parkway
Suite 550
Atlanta, GA 30338

Laboratory Results for: Roper

Dear Justin:

Enclosed are the results of the sample(s) submitted to our laboratory between September 3, 2015 and September 5, 2015. For your reference, these analyses have been assigned our service request number **R1507363**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ALS Environmental

Client:	EPS
Service Request No.:	R1507363
Project:	Roper
Date Received:	9/03-05/2015
Sample Matrix:	Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS), Matrix Spikes, and Duplicates.

Sample Receipt

Water samples were received for analysis at ALS Environmental on 9/3-5/15. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory. All samples were filtered and preserved in the laboratory at the client's request.

Inorganics

Water samples were analyzed for Hexavalent chromium by method 218.6.

Site specific QC was not requested on these samples; however was performed. All outlying QC has been flagged with an "*".

All Method blanks were free of contamination above the MRL except for a low level detection on the 09/21/15 blank. The samples were repeated and again the was a positive detection. It appears that the matrix of the sample is causing the closing CCB to have a positive detection.

All remaining QC criteria were met.

00002 rev

CASE NARRATIVE

This report contains analytical results for the following samples:
Service Request Number: R1507363

Lab ID	Client ID
R1507363-001	15245-MW-1
R1507363-002	15245-MW-5
R1507363-003	15245-MW-9S
R1507363-004	15245-MW-9D
R1507363-005	15245-MW-6
R1507363-006	15245-MW-6DS
R1507363-007	15245-DUP-1
R1507363-008	15246-MW-6D
R1507363-009	15246-MW-2
R1507363-010	15246-MW-12D
R1507363-011	15246-MW-13D
R1507363-012	15246-MW-14
R1507363-013	RINSATE
R1507363-014	15247-MW-11
R1507363-015	15247-MW-7
R1507363-016	15247-MW-4
R1507363-017	15247-MW-3

ALS Environmental

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% (25% for CLP) difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

ACCREDITED IN ACCORDANCE WITH nelac

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Collected: 9/ 2/15 - 9/ 4/15
Date Received: 9/ 3/15 - 9/ 5/15

Analysis Method: 218.6 LL

Units: µg/L
Basis: NA

Chromium, Hexavalent, Dissolved

Sample Name	Lab Code	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
15245-MW-1	R1507363-001	**0.107**		0.020	1	NA	9/21/15 15:36	
15245-MW-5	R1507363-002	**0.076**		0.020	1	NA	9/21/15 15:48	
15245-MW-9S	R1507363-003	**0.268**		0.020	1	NA	9/21/15 16:00	
15245-MW-9D	R1507363-004	**75.7**		2.0	100	NA	9/21/15 19:43	
15245-MW-6	R1507363-005	**0.170**		0.020	1	NA	9/21/15 16:24	
15245-MW-6DS	R1507363-006	**0.329**		0.020	1	NA	9/21/15 16:36	
15245-DUP-1	R1507363-007	**0.303**		0.020	1	NA	9/21/15 16:48	
15246-MW-6D	R1507363-008	**0.200**		0.020	1	NA	9/21/15 17:00	
15246-MW-2	R1507363-009	**1.04**		0.040	2	NA	9/21/15 20:43	
15246-MW-12D	R1507363-010	**191**		0.40	20	NA	9/21/15 21:31	
15246-MW-13D	R1507363-011	**62.3**		0.20	10	NA	9/21/15 21:43	
15246-MW-14	R1507363-012	**3.50**		0.040	2	NA	9/21/15 21:55	
RINSATE	R1507363-013	**0.202**		0.020	1	NA	9/23/15 19:22	
15247-MW-11	R1507363-014	**0.157**		0.020	1	NA	9/23/15 18:34	
15247-MW-7	R1507363-015	**0.132**		0.020	1	NA	9/23/15 18:46	
15247-MW-4	R1507363-016	**0.025**		0.020	1	NA	9/23/15 18:58	
15247-MW-3	R1507363-017	**0.145**		0.020	1	NA	9/23/15 19:10	
Method Blank	R1507363-MB1	0.020	U	0.020	1	NA	9/21/15 14:53	
Method Blank	R1507363-MB2	**0.028**		0.020	1	NA	9/21/15 20:07	
Method Blank	R1507363-MB3	0.020	U	0.020	1	NA	9/23/15 14:53	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Collected: 9/2/15
Date Received: 9/3/15
Date Analyzed: 9/21/15

Matrix Spike Summary
General Chemistry Parameters

Sample Name: 15245-MW-9D
Lab Code: R1507363-004

Units: µg/L
Basis: NA

Analytical Method: 218.6 LL

15245-MW-9DMS
Matrix Spike
R1507363-004MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec		% Rec Limits
Chromium, Hexavalent, Dissolved	75.7	92.8	20.0	85	*	90 - 110

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Collected: 9/3/15
Date Received: 9/4/15
Date Analyzed: 9/21/15

Matrix Spike Summary
General Chemistry Parameters

Sample Name: 15246-MW-2
Lab Code: R1507363-009

Units: µg/L
Basis: NA

Analytical Method: 218.6 LL

Analyte Name	Sample Result	15246-MW-2MS Matrix Spike R1507363-009MS Result	Spike Amount	% Rec		15246-MW-2DMS Duplicate Matrix Spike R1507363-009DMS Result	Spike Amount	% Rec		% Rec Limits	RPD	RPD Limit
Chromium, Hexavalent, Dissolved	1.04	1.39	0.400	89	*	1.38	0.400	86	*	90 - 110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Collected: 9/3/15
Date Received: 9/4/15
Date Analyzed: 9/23/15

Matrix Spike Summary
General Chemistry Parameters

Sample Name: RINSATE
Lab Code: R1507363-013

Units: µg/L
Basis: NA

Analytical Method: 218.6 LL

		RINSATEMS Matrix Spike R1507363-013MS			RINSATEDMS Duplicate Matrix Spike R1507363-013DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chromium, Hexavalent, Dissolved	0.202	0.392	0.200	95	0.416	0.200	107	90 - 110	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Analyzed: 9/21/15

Lab Control Sample Summary
General Chemistry Parameters

Units: µg/L
Basis: NA

Analyte Name	Method	Lab Control Sample R1507363-LCS1 Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6 LL	0.188	0.200	94	90 - 110

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Analyzed: 9/21/15

Lab Control Sample Summary
General Chemistry Parameters

Units: µg/L
Basis: NA

Analyte Name	Method	Lab Control Sample R1507363-LCS2 Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6 LL	0.193	0.200	97	90 - 110

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Environmental Planning Specialists
Project: Roper
Sample Matrix: Water

Service Request: R1507363
Date Analyzed: 9/23/15

Lab Control Sample Summary
General Chemistry Parameters

Units: µg/L
Basis: NA

Analyte Name	Method	Lab Control Sample R1507363-LCS3 Result	Spike Amount	% Rec	% Rec Limits
Chromium, Hexavalent, Dissolved	218.6 LL	0.190	0.200	95	90 - 110

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

30538

ALS Environmental

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF _____

Project Name: Roper	Project Number:
Project Manager: Justin Vickery	Report CC:
Company/Address: EPS 1050 Crown Point Pkwy Suite 550 Atlanta, GA 30338	
Phone #: 404-315-9113	Email: sweber-snapp@envplanning.com
Sampler's Signature:	Sampler's Printed Name: Sofie Weber-Snapp

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	218.6 Cr low level							REMARKS/ ALTERNATE DESCRIPTION
15245-MW-1	-001	9/2/15	1000	GW	1								1							
15245-MW-5	-002	9/2/15	1010	GW	1								1							
15245-MW-9S	-003	9/2/15	1150	GW	1								1							
15245-MW-9D	-004	9/2/15	1310	GW	1								1							
15245-MW-6	-005	9/2/15	1240	GW	1								1							
15245-MW-6DS	-006	9/2/15	1335	GW	1								1							
15245-DUP-1	-007	9/2/15	1200	GW	1								1							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals Samples need filtering and buffering by the lab.

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day

REQUESTED REPORT DATE _____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw

Edata X Yes _____ No

INVOICE INFORMATION
PO #
BILL TO:

R1507363 5
Environmental Planning Specialists
Hexavalent chromium

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	
Signature: Sofie Weber-Snapp	Signature:	Signature	Signature	Signature	Signature
Printed Name: Sofie Weber-Snapp	Printed Name:	Printed Name	Printed Name	Printed Name	Printed Name
Firm: EPS	Firm: ALS	Firm	Firm	Firm	Firm
Date/Time: 9/2/15 1500	Date/Time: 9/3/15 0800	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservat

R1507363 5
Environmental Planning Specialists
Hexavalent chromium

Project/Client EPS Folder Numbe

Cooler received on 9/3/15 by: @

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N (NA)
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (Wet Ice) **Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 9/3/15 Time: 1010 ID: (IR#3) IR#5 From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.1°						
Correction Factor (°C)	—						
Corrected Temp (°C)	3.1°						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by @ on 9/3/15 at 0902
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: KB 9/4/15

Cooler Breakdown: Date: 9/3/15 Time: 1755 by: @

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (NA)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 060515-2440

Other Comments:

218.6 (7)
9/2/15
1000 - ~~1310~~
1335

PC Secondary Review: KB 9/4/15

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: _____

Date: 9/3/15 Page 1 of 1

COMPANY:	ADDRESS:
EPS	1050 Crown Point Pkwy Atlanta, GA 30336
PHONE: 404-315-9113	FAX:
SAMPLED BY: Sofie Weber-Snapp	SIGNATURE: Sofie Weber-Snapp

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)	REMARKS	No # of Containers
1	15246-MW-6D -008	9/3/15	0910	X		GW	1		
2	15246-MW-2 -009	9/3/15	0850	X		GW	1		
3	15246-MW-12D -010	9/3/15	1030	X		GW	1		
4	15246-MW-13D -011	9/3/15	1145	X		GW	1		
5	15246-MW-14 -012	9/3/15	1310	X		GW	1		
6	Rinsate -013	9/3/15	1320	X		GW	1		
7									
8									
9									
10									
11									
12									
13									
14									

ANALYSIS REQUESTED: 218.6 6+ low level

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

R1507363 5
Environmental Planning Specialists
Roper

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1: Sofie Weber-Snapp	9/3/15 1430	1:	
2:		2: [illegible]	9/4/15 0755
3:		3:	

SPECIAL INSTRUCTIONS/COMMENTS:
Samples need filtering and buffering by the lab

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER_____

PROJECT INFORMATION
PROJECT NAME: Roper
PROJECT #:
SITE ADDRESS:
SEND REPORT TO:
INVOICE TO:
(IF DIFFERENT FROM ABOVE)
QUOTE #:_____ PO#:_____

RECEIPT
Total # of Containers

Turnaround Time Request
- ⊗ Standard 5 Business Days
- ○ 2 Business Day Rush
- ○ Next Business Day Rush
- ○ Same Day Rush (auth req.)
- ○ Other _____

STATE PROGRAM (if any): _____
E-mail? Y N; Fax? Y / N
DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Cooler Receipt and Preserva

R1507363 5
Environmental Planning Specialists
Roper

Project/Client EPS Folder Numb

Cooler received on 9/4/15 by: JD

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y)	N
2	**Custody papers** properly completed (ink, signed)?	(Y)	N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y)	N
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	(Y)	N

5a	**Perchlorate** samples have required headspace?	Y	N	NA
5b	Did VOA vials, Alk, or Sulfide have sig* **bubbles**?	Y	N	NA
6	Where did the bottles originate?	ALS/ROC	CLIENT	
7	Soil VOA received as:	Bulk	Encore	5035set (NA)

8. Temperature Readings Date: 9/4/15 Time: 0755 ID: (IR#3) IR#5 From: (Temp Blank) ~~Sample Bottle~~

Observed Temp (°C)	5.3						
Correction Factor (°C)	-1.2						
Corrected Temp (°C)	4.1						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: Rear by JD on 9/4/15 at 0805
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: KB 9/4/15

Cooler Breakdown: Date: 9/4/15 Time: 1016 by: MDS

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 061515-2AA8

Other Comments:

218.6 LL (4)
9/3/15
0850 - 1320

PC Secondary Review: 9/4/15 KB

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

29351

ALS Environmental

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name: Roper	Project Number:
Project Manager: Justin Vickery	Report CC:
Company/Address: EPS	
1050 Crown Point Pkwy Suite 550	
Atlanta, GA 30338	
Phone #: 404-315-9113	Email: swebersnapp@envplanning.com
Sampler's Signature: Sofie Weber-Snapp	Sampler's Printed Name: Sofie Weber-Snapp

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	218.6 Cr low level									REMARKS/ ALTERNATE DESCRIPTION
15247-MW-11		9/4/15	0840	GW	1								1									
15247-MW-7		9/4/15	0945	GW	1								1									
15247-MW-4		9/4/15	1100	GW	1								1									
15247-MW-3		9/4/15	1155	GW	1								1									

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals Samples need filtering and buffering in the laboratory

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day

REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data

Edata X Yes _____ No

INVOICE INFORMATION
PO #
BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Sofie Weber-Snapp	Signature:	Signature	Signature	Signature	
Printed Name: Sofie Weber-Snapp	Printed Name:	Printed Name	Printed Name	Printed Name	
Firm: EPS	Firm: ALS	Firm	Firm	Firm	
Date/Time: 9/4/15 1300	Date/Time: 9/5/15 0847	Date/Time	Date/Time	Date/Time	Date/Time

R1507363 5
Environmental Planning Specialists
Roper

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

Project/Client EOS Folder Number 715-7363

Cooler received on 9/5/15 by: [illegible]

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y) N	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk, or Sulfide have sig* **bubbles**?	Y N (NA)
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	(ALS/ROC) CLIENT
4	Circle: (Wet Ice) **Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as: Bulk Encore 5035set	(NA)

8. Temperature Readings Date: 9/5/15 Time: 0850 ID (IR#3) IR#5 From: Temp Blank (Sample Bottle)

Observed Temp (°C)	5.5						
Correction Factor (°C)	-0.1						
Corrected Temp (°C)	5.4°						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by [illegible] on 9/5/15 at 0851
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: JNV 9/10/15

Cooler Breakdown: Date: 9/8/15 Time: 0705 by: [illegible]

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (NA)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: [illegible]

Other Comments:

218.6 (4)
9/4/15
0840-1155

PC Secondary Review: JNV 9/10/15

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

00017